Marine Corps Gazette

SEPTEMBER 1954

THIRTY CENTS

'Round The Clock Close Air Support

Marine Corps Gazette

SEPTEMBER 1954
NUMBER 9
VOLUME 38

PROFESSIONAL MAGAZINE FOR UNITED STATES MARINES

IN THIS ISSUE

ROUND THE CLOCK CLOSE AIR SUPPORT ..... *Maj B. J. Matheson* 12

WHY PALLETS? ..... *LtCol F. A. Long* 16

RED ARMOR ..... *Garrett Underhill, Jr.* 20

MONGOL HORDE ..... *LtCol G. A. Hardwick* 28

MORE POWER WITH GAS TURBINES ..... *Annesta R. Gardner* 32

THE DEVELOPMENT OF MCS ..... *LtCol V. J. Croizat* 36

COORDINATION—NOT SUBORDINATION ..... *Maj R. S. Stubbs II* 44

STANDARDIZE THE MARKING SYSTEM ..... *Capt J. E. Forde, Jr.* 48

THREE YEARS UNDER THE UCMJ ..... *LtCol O. V. Bergren* 52

MESSAGE CENTER 1

IN BRIEF 47

OUR AUTHORS 10

PASSING IN REVIEW 58

COVER

Our cover this month was designed by Sergeant Leroy Preudhomme, one of our staff artists. The plane is, of course, an F3D "Skynight," the best in the business today for night operations. But for one pilot's opinion on just what we need in the way of aircraft for total *Around-the-Clock* close air support in the future, turn to page 12. Back cover: a quote made to our Commandant by the British Chief of the Imperial General Staff. (The quotation is from *Infantry Brigadier* by MajGen Sir Howard Kippenberger.)

PUBLISHED BY THE MARINE CORPS ASSOCIATION

THE MARINE CORPS GAZETTE, copyright 1954 by the Marine Corps Association, Box 106, Marine Corps Schools, Quantico, Va., and published monthly. Entered as second class matter at the post-office at Quantico, Va., under the act of March 3, 1879. Editorial, Business Offices: Marine Corps Schools, Quantico, Va.; telephone ext. 4780 and 9717. Subscription rate, $3.00 a year; single copy, 30 cents. Subscriptions of all members or honorably discharged former members of the Armed Forces include membership in the Marine Corps Association. Articles, photographs, book reviews and letters of professional interest are invited. If accepted, these are paid for at prevailing space rates. Material may not be reproduced without permission. Picture credits: All pictures official Marine Corps, Army, Navy, Coast Guard or Air Force photos unless otherwise credited.

Editor-in-Chief
Col L. C. Hudson

Editor and Publisher
Maj David M. Cox

Managing Editor
Capt H. W. Henzel

Associate Editor
WO Fred T. Stolley

Business Manager
IstLt R. A. Haydock

Editorial Board
Col W. J. Van Ryzin, Col J. C. Murray, Col J. D. Hittle, Col N. Anderson, LtCol J. A. Donovan Jr., Maj H. S. Hill, Maj R. S. Stubbs, II, Maj G. A. Hanna, Capt J. B. Soper

Art Director
TSgt D. W. Kiser

Art Staff
TSgt S. E. Dunlap, Jr., Sgt L. Preudhomme

Editorial Assistants
Sgt J. T. O'Sullivan, Mrs. Alice Paul

Business Staff
TSgt R. W. Boltz, SSgt M. Lehrer, Pfc D. E. Freedman, Pfc R. J. Johnson, Pfc J. J. Cetinski, Pfc J. K. McCormack, Pfc J. A. Palio, Pfc R. C. Parziale

Advertising Representative
Shannon & Associates, Inc.
New York—28 West 44th Street
Chicago, Atlanta, Cleveland, Detroit, St. Louis, Kansas City, Mo., Los Angeles and San Francisco

Opinions expressed in the Gazette do not necessarily reflect the attitude of the Navy Department nor of Headquarters, United States Marine Corps

message center

Roger!

. . . In line with the Commandant's policy and the results of General Litzenberg's board, it's high time that the persons responsible for the state of readiness of the Marine Corps (the S 3's) awaken to the fact that the majority of the men in the Corps are not complete idiots.

For a routine parade in the average unit, there are reams of written orders explaining in the most minute detail the where, when and how of the position of every private in the rear rank. Then, as if this were not enough, there is at least one dummy run.

Why in the devil can't we show a parade on the training schedule at a specified time, fall out at that time and then do the darn thing?

The various persons (guidon bearers, color guards, etc.) who need schooling should have it, but let's not tie up a whole unit in doing so.

Save all this paper work and lost man hours and spend the saved time working on our tanks, guns, or something else to make the troops more proficient in the act of being a Marine.

DONALD J. O'NEILL
MSgt, USMC
Camp Lejeune, N. C.

"You'll never plumb the 'Oriental' mind and if you did, it isn't worth the toil."—Rudyard Kipling

No "Soft Touch"

. . . In answer to SSgt Clingman's suggestion (*Recruiter's Suggestion*, July issue), pertaining to recruit leave, I would like to emphasize that for 178 years the Marine has been proud of his rugged training and has been famous for tales about Drill Instructors and Boot Camp. Marine Corps Recruiting Service has, for years, offered travel and adventure as enlistment incentives aimed directly at the type of man who would desire just such a life. It is the purpose of the Corps to draw men willing to work hard and sacrifice a little more in return for prestige and honor.

The Corps' problem is not getting men but getting desirable type men. The Draft can supply us with men, but we desire, through the medium of sound recruiting principles, to enlist volunteers who the training elements can mold into Marines. This training cannot be accomplished without the basic ingredients of spirit, fortitude and an ardent desire to be a Marine.

To use the "easy life" or "soft touch" inducement would only draw the weaker, less desirable type persons. It was once said that the Corps wants men who are willing to live as bravely as they are willing to die.

If SSgt Clingman advocates recruiting by the "soft touch" appeal, I feel sure that a tour as a Parris Island Drill Instructor would change his mind.

RICHARD T. FERRY
2dLt, USMC
Parris Island, S. C.

Fog Count

. . . It is easy to agree with the apparent objective of Colonel W. F. Prickett's *Economy In Writing* (GAZETTE, July 1954). He got tangled in his own snare though, by failing to consider the most important criterion of any writing—does it say what you want said? It might be short, folksy and easily understood in actual content, but if that content is not the same as the idea in the author's brain, of what avail is it?

There is a readability formula used by the Air Force, among others, called a Fog Count. The device is based on adding up different numerical values given to hard and easy words in a sentence. To write within the comfortable grasp of the average man, the average Fog Count must be held to 20 or under. The first sentence in Colonel Prickett's "good" example has a Fog Count of 44. On the Fog Count scale this means it would take a Ph.D. to understand the sentence.

The second sentence begins: "In other words. . . ." If the thought were first expressed simply and clearly it would not have to be put "in other words." Better say it once and not confuse people by saying it again a different way. Some men, reading that second sentence, may think that you can trade *only* "a clerk for a plumber."

EDSON W. CARD
Maj, USMC
Fort Belvoir, Va.

AT Weapons No Answer

. . . The light wheeled or tracked vehicles mounting recoilless weapons that LtCol Aldridge proposes in his article are unsuited to counteract enemy anti-tank weapons or an armored thrust, because of their restricted mobility, vulnerability to all sorts of fire and limited firepower. They can not take the place of armor in retaining the impetus and exploiting the tactical advantages gained by the shock action of the assault waves of an amphibious operation.

The quality and quantity of our armor has increased, but we still lack the special landing craft to put a heavy concentration ashore at the desired time and place. This, then, is the problem. The committing of tanks piecemeal in the last war led to a mistaken concept that an amphibious operation can not be an armored one. Could the fallacy lie here?

RAYMOND M. RYAN
Capt, USMC
MAG-12, FPO, San Francisco

Bring Back "The Hat"

. . . In years gone by we knew the names of all the good shooters. They were not only known by name, but by

the medals they possessed and who expected to make "Distinguished" in the coming match. In your article no names were published with the picture. I recognize Major Compton and CWO Carpenter, probably know more of them, but the years do change a person.

The good old campaign hat brings back fond memories of the days *all* Marines wore them and not just a few shooters. . . Why, oh why, did we let that beautiful piece of uniform get away from us? The drill instructor should wear the hat the same as the shooter. Who ever heard of a drill instructor without the "hat and swagger stick?"

RALPH H. GILB
CWO, USMC

3d MarDiv

Intelligence

. . . *The Price of Intelligence* by Captain A. B. Waters, decries the present failing of the Marine Corps in intelligence and calls for the training of officers for an intelligence career. This need of career intelligence officers the writer largely bases on the required abilities, both natural and acquired, of a competent S-2 or G-2.

This imposing array of attributes would certainly make an S-2/G-2 more valuable—or any officer for that matter. But are they the necessity they are represented to be? The writer appears to have projected his division and corps G-2 much too far into the strategic intelligence picture. A G-2 at this level does not perform the same function as ONI or CIA. Let us not confuse strategic and tactical intelligence.

Remember also the G-2 has (or should have) trained interrogators, CIC personnel, photo interpreters and other trained individuals available to perform specialized functions. Counter-intelligence, not the G-2, does the "cloak-and-dagger" work. These people exist for the same reason a commander's staff exists.

The major task required to improve our intelligence is to make *all* commanders realize the importance of intelligence to them. The Intelligence School here at Fort Riley, language schools and other schooling, will equip an individual for intelligence duties. Five years of training is not required before the S-2/G-2 becomes an asset. Here again, we are being shown the "big picture"—strategic intelligence. No full time intelligence officers for the Marine Corps—just educate all hands that "intelligence is for commanders" and then our intelligence will be a long step toward assuming its proper role.

CHARLES S. WHITING
Capt, USMC

Fort Riley, Kansas

A Cross to Bear

. . . Having fired a score of over 210 with the M1 rifle for the second or third time in my career, I have again been issued the most perplexing badge I have ever encountered. Without a doubt the Marine Corps Sharpshooter Badge is very distinguished looking, but only when it sets properly on the uniform . . . and this happens very seldom. The reason it doesn't, is because the single link separating the cross from the bar allows the cross to pivot, jump and even hang sideways at times. I believe this could be remedied by eliminating the old link from the center and placing one link on each point of the topmost side of the cross. This change would prevent the cross from swinging, and make for a neater uniform appearance of personnel who rate the badge.

R. L. WROTEN
Sgt, USMC

Annapolis, Md.

Uniform Board

. . . During the past few years there has been quite a bit of discussion about the utility uniform and particularly its lack of military appearance.

I would like to submit the two following suggestions to make utilities look more like a Marine uniform. They are simple, inexpensive and would add uniformity, color and

SAVE UP TO 1/3 NOW

AUTO INSURANCE

Now, for the first time, GOVERNMENT SERVICES INSURANCE UNDERWRITERS offer immediate savings to 33⅓% on complete coverage auto insurance from prevailing board rates in your state or territory. New low rates effective immediately. Join the thousands of policy holders enjoying protection against loss from bodily injury and property damage, liability, medical payments, accidental death, comprehensive personal liability, comprehensive fire and theft coverage, towing, and collision damage to your car. Why pay more when these new increased savings are passed on to you immediately? More than 600 claim representatives are ready to serve you in case of accident. Available to officers on active, reserve or retired status; and 1st 3-graders who are at least 25 and married.

HOUSEHOLD & PERSONAL PROPERTY

SAVE UP TO 1/3 NOW

NEW ALL-RISK COVERAGE

Make sure your valuable personal property is covered by insurance regardless of where you may be in the world. This new policy gives you maximum protection at savings up to 33⅓% and is written with you and your possessions in mind. Protects clothing, furniture, jewelry, household goods and other valuable personal effects. Act now! Mail coupon today!

MAIL COUPON FOR FULL DETAILS

GOVERNMENT SERVICES INSURANCE UNDERWRITERS
NOT AFFILIATED WITH U.S. GOV'T.

GOVERNMENT SERVICES INSURANCE UNDERWRITERS
Crockett and Presa Streets, San Antonio, Texas 9

NAME .....

ADDRESS .....

AGE ..... RANK ..... MARRIED ..... SINGLE .....

Car Description ..... Annual Mileage .....

Business Use ..... Age of Drivers .....

☐ AUTO IN U.S. ☐ AUTO OVERSEAS ☐ PERSONAL PROPERTY

don't wonder!

don't worry!

CALL TODAY AND BE SURE

If you're thinking about somebody or there's something you want to get settled . . . don't wonder, don't worry. Call Long Distance today and be sure.

It's quick, personal, satisfying. And the cost is low— much lower, we find, than most people think.

LONG DISTANCE RATES ARE LOW

Here are some examples:

New York to Philadelphia	**40¢**
Cincinnati to Indianapolis	**40¢**
New Orleans to Houston	**80¢**
St. Louis to Dallas	**$1.05**
San Francisco to Boston	**$2.00**

These are Station-to-Station rates for the first three minutes, after 6 o'clock every night and all day Sunday. They do not include the federal excise tax.

YOU SAVE TIME WHEN YOU CALL BY NUMBER

BELL TELEPHONE SYSTEM

military smartness to the utilities.

1. Put our clutch type collar emblems on the collar. The emblems are dark and would not stand out in combat. A Marine's most prized possession is his emblems. Let him wear the symbols of his devotion in combat.

2. Put the cotton winter service chevrons on the utility jacket. By putting chevrons on the jacket we would get color and uniformity. We would then have a colorful, distinctive uniform which could be worn in garrison. In combat, the chevrons could be removed and the metal rank insignia could be worn on the utility cover and helmet cover. I believe the utility uniform with these two additions, when starched and pressed, would be a much smarter, neater, garrison uniform than our present cotton khaki uniform.

Furthermore, by dropping the cotton khaki from our clothing issues and issuing another set of tropicals and utilities the Marine Corps would be saving $2.60 per man.

HUGH W. DAVIS
SSgt, USMCR
3d MarDiv

. . . I don't know whether the GAZETTE has received any gripes on this particular item of clothing before, but if not, something should be said about the new raincoat.

Evidently designed to fill a two-fold role of both raincoat and overcoat it does neither. As a raincoat it keeps out nothing save a light drizzle, and that not for long. The addition of chevron and hashmark thread holes does nothing to add to its permanence and when wet clear through, as it inevitably becomes, it changes from a soft Marine green material to a near black and stiff, sometimes wrinkled sack.

As to its utility in the overcoat field, one needs only to observe the various guard companies standing post in cold weather areas wearing sheep lined "range" jackets instead of the old overcoat to realize its half-hearted replacement does not measure up to standard.

I'm for the old overcoat back plus a true, serviceable raincoat, perhaps more expensive, but also a good thing to be in when out in the rain.

THOMAS S. SCULLY
SSgt, USMC
New River, N. C.

Heartland vs Rimland

. . . Colonel Hittle's article *20th Century Amphibious Warfare,* in the June GAZETTE brings into clearer focus a concept that has been developing over the past few months in both the GAZETTE and the *Naval Institute Proceedings.* Once that concept has been "firmed up" and is presented to the public in a clear, simple form, it will go a long way toward establishing in the public mind a sound understanding of the present mission and purpose of both the Navy and the Marine Corps. All will agree, I think, that even since Korea, the general picture in regard to sea power and amphibious warfare has been fuzzy and uncertain.

More important, the "Rimland" concept developed by Colonel Hittle and others, demonstrates the vast field of endeavor which lies before the Naval Establishment in the present crisis. Recognition of this by all parties concerned should lay to rest the fuss and furor over mission "boundaries" that has characterized the American military scene since World War II.

WILLIAM V. KENNEDY
1stLt, USAF
Limestone AFB, Me.

. . . As a survivor of the 1915 Gallipoli venture, I can fully endorse Colonel Hittle's contention (in *20th Century Amphibious Warfare*) that had we "been the beneficiaries of a reasonably adequate amphibious doctrine," we should have achieved victory on the Peninsula.

Despite the warning given by the Navy's "knocking on the door" for weeks prior to the troops being set ashore, had forethought and careful prior planning ensured immediate exploitation of the successful, but atrociously costly initial landing (a couple of fresh brigades would have sufficed); the British would have joined up with the Anzacs, the vital Narrows would have come under control, and the job we set out to do would have been well and truly accomplished.

REGINALD HARGREAVES
Maj (ret.) British Service
Hampshire, England

R. I. P.

. . . *Of Mortars And Men* recalled to mind a song about "the weapon nobody loves," composed by a group of 1st Raiders back in 1942. Until now I have resisted the urge to send it to you. However, the many passionate and vociferous replies in defense of that weapon now compel me to do so.

It recounts the devotion of the "Poor Mortar Man" for his "Pig Iron Bastard." Here it is (sung to the tune of "Bless 'Em All")—

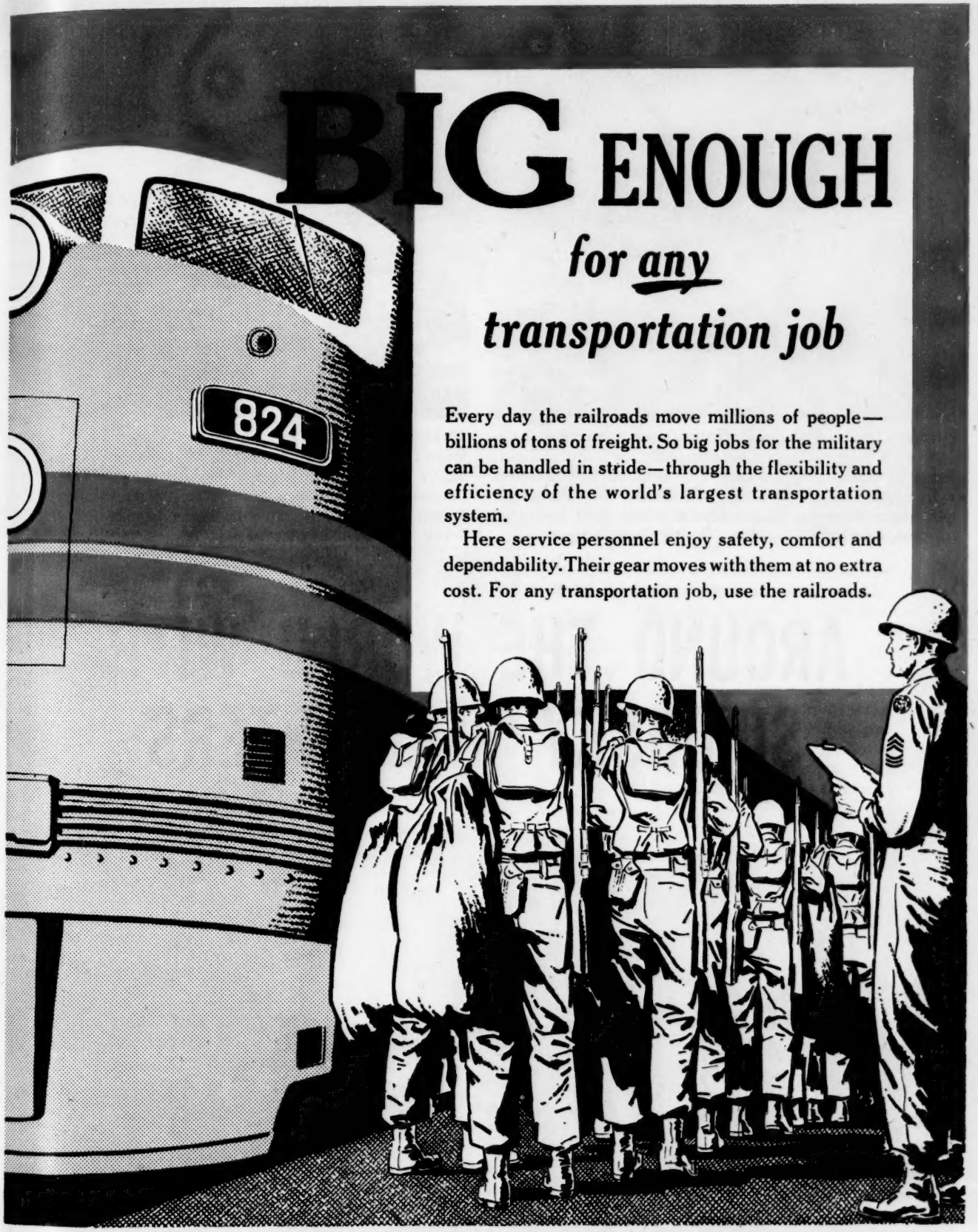
THE MORTAR MAN'S SONG

We own the weapon that nobody loves,
They say our gun's a disgrace.
We come up two hundred and two hundred more,
It lands in the very same place.
There's many a gunner who's blowing his top,
Observers are all going mad,
But our devotion has lasted for the Pig Iron Bastard,
It's the best gun the world's ever had.
Chorus:
Bless 'em all, Bless 'em all,
Shells heavy, light, big and the small.
Bless high explosives and pull out the pin
Check all your charges and drop the shell in.
Oh, it's out of the gun with a wham.
Where it lands we don't give a damn.
It'll be over or under,
If it's on it's a wonder,
That's the life of a Poor Mortar Man!

J. B. SWEENEY
LtCol, USMC
Washington, D. C.

. . . The rates of fire for artillery weapons given in the June GAZETTE do not give a true picture of their battlefield capability in this characteristic.

The rates of fire used were those for the maximum propelling charge, (Charge 7), which naturally causes



BIG ENOUGH

for any transportation job

Every day the railroads move millions of people—billions of tons of freight. So big jobs for the military can be handled in stride—through the flexibility and efficiency of the world's largest transportation system.

Here service personnel enjoy safety, comfort and dependability. Their gear moves with them at no extra cost. For any transportation job, use the railroads.

Get the facts. *Special discounts for military travel...reduced fares for furloughees. Ask your railroad representative.*

Railroads
of the United States

DEPENDABLE Transportation

LONDON—Sabena Belgian Airlines recently linked England with Europe by an experimental helicopter flight, first ever made from the center of Brussels to the center of London. One of the airlines' Sikorsky S-55 passenger helicopters flew the cross-channel route in 2 hours 45 minutes, landing at London's South Bank heliport.

ANTARCTIC—Flying over ice-choked seas, S-55 helicopters from the Argentine Navy recently rescued 20 men virtually marooned for the past two years on Graham Land peninsula. The Sikorskys, operated from the deck of an Argentine transport vessel, made six round trips to bring the stranded men to safety.

AROUND THE WORLD WITH SIKORSKY HELICOPTERS

JAPAN—One of eleven Sikorsky S-55 helicopters built for Japan is pictured above being test flown with new flotation gear. This model is for Japan's official Maritime Safety Agency. Other Sikorsky S-55s are being delivered for service with air and ground branches of that country's National Safety Agency and Maritime Safety Agency.

INDIA—Civil purposes such as crop dusting or spraying, illustrated above, will be one major mission of three Sikorsky S-55 helicopters being delivered to the Indian Air Force. Because of their rugged dependability and large cargo capacity, versatile Sikorskys are in wide use for military and commercial purposes around the world.

TEXAS—Once more relief and rescue from flood hazards came with the whirling rotors of Sikorsky helicopters, this time during early summer floods along the Rio Grande River in southwest Texas. In one big airlift alone, thirteen H-19s from Gary Air Force Base at San Marcos, carried 266 passengers from a railroad train stranded by the flood at Langtry. They flew precious drinking water and vital supplies to isolated areas, lifted victims from the torrent and marooned people to safety.

SIKORSKY AIRCRAFT

BRIDGEPORT, CONNECTICUT

One of the Divisions of United Aircraft Corporation

the greatest tube heating and erosion. These rates can be greatly exceeded when using the lower propelling charges—which are used for the great preponderance of direct support fire missions. A common lack of appreciation of this frequently results in not achieving the best possible plan of supporting fires for infantry operations.

The only real limitation on artillery rates of fire in combat is how fast the cannoneers can load and fire the piece.

F. P. HENDERSON
Col, USMC
Fort Sill, Okla.

. . . As one who as a lieutenant commanded an 81mm mortar platoon in the early stages of World War II, and as a rifle battalion commander in Korea in the spring and summer of 1951, I wish to say that LtCol Nihart states very clearly and conclusively the reasons for retaining the mortars in the Marine Corps. With all due respect for the artillery, when I go to fight, I don't want to be without those mortars, and I want them right under my command if I have a rifle battalion again. Ask any infantryman or rifleman what he thinks of the mortars. He is definitely for them.

In this connection, the 2/1 in May 1951 picked up seven horses from the Chinese Communist Forces and used them to carry 81mm mortar ammunition for several months until eventually they all became casualties.

Three cheers for LtCol Nihart!

ROBERT K. MCCLELLAND
LtCol, USMC
Quantico, Va.

. . . Allow me to "nit-pick" at *Necessity—Not Sentiment.*

The author assumes a "normal situation" to compare the ranges of the 105mm howitzer and the 4.2" mortar. I question his use of the word "normal."

The Artillery School here at Ft. Sill teaches that light artillery is emplaced 2,000 to 4,000 yards behind the forward infantry, as a rough guide. The shorter figure is the "normal" for offense and the other for defense. It has been my experience that we Marines do adhere fairly close to these figures, not because they are "figures," but because they indicate what experience says is the most effective location. And, in an amphibious operation (our primary role), the ranges where we "normally" find 105's are well below the 2,000 yard figure.

Now, let's compare the 4.2 with the 105. Our "normal" situation is more often offense than defense. At 2,000 yards behind the lines, the

105mm howitzer has an effective range of 10,000 yards. The 4.2, at 1,000 yards, an accurate "normal," has an effective range of 5,500. So, in truth, the 105mm howitzer does have an effective range of almost twice the 4.2-inch mortar instead of only 50 per cent as claimed.

REX A. WHITE
Capt, USMC
Ft. Sill, Okla.

. . . I for one believe that the mortars are here to stay as long as we may engage in infantry action. They are the one weapon which is immediately available to the infantry for close in support and can be used effectively by any infantry unit from a small patrol to a regimental operation because of their mobility and simplicity. An infantryman wants supporting arms that can move with him and be able to set up wherever he may find action, no matter how difficult the terrain may be. All a mortar needs is a piece of ground and overhead clearance.

PHILIP T. JEFFERS
1stLt, USMCR
U. S. Naval Hospital
Oakland, Calif.

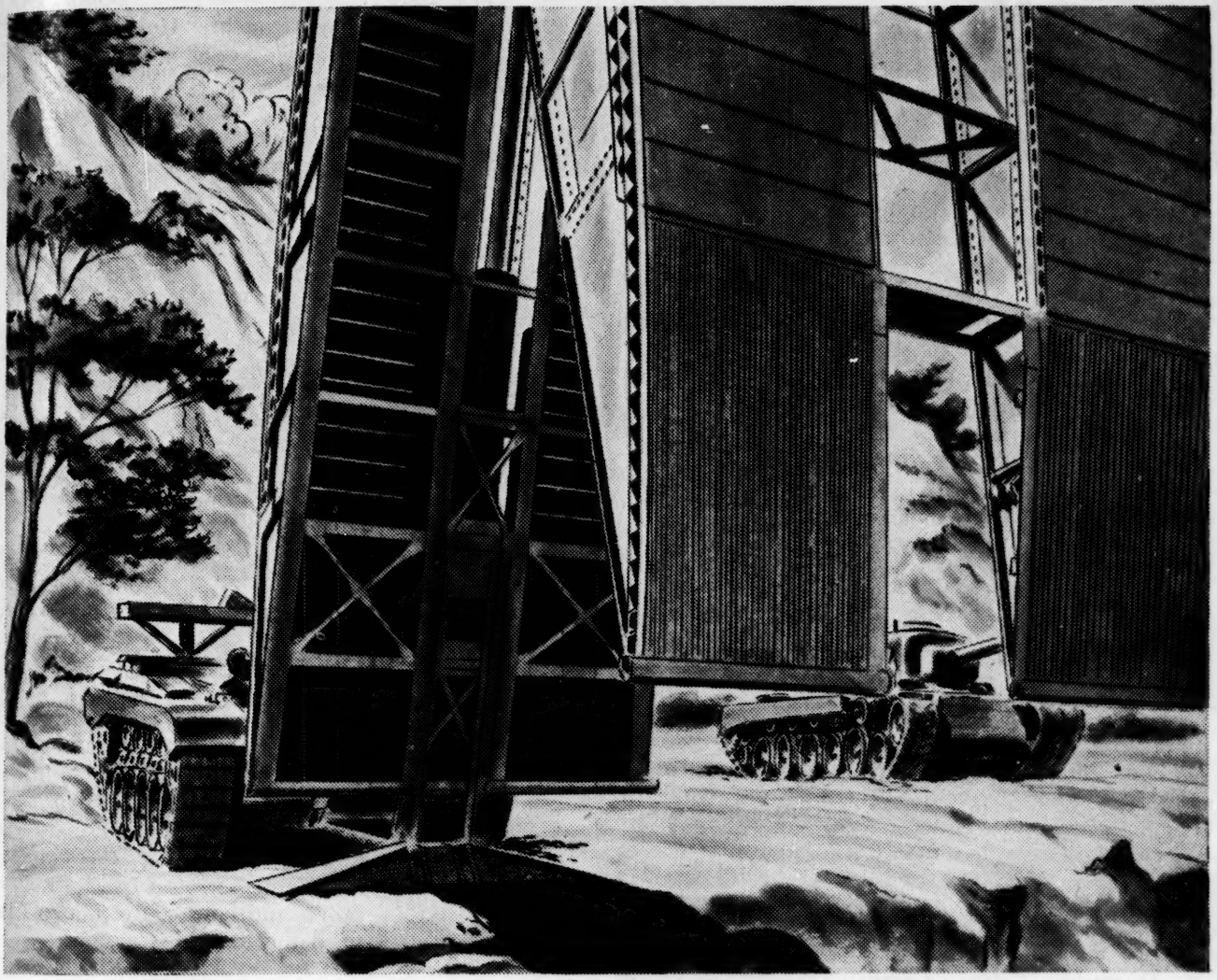
The mortar debate has been long and impassioned, but now that we have finished praising Caesar, let's get on with the job. Ed.

The Uniform Shop
MARINE CORPS EXCHANGE

OPERATED BY
Jos. A. Wilner & Co.
Custom Tailors since 1897

Now your choice of a Wilner uniform individually tailored to your exact measurements . . . or a complete selection in stock of ready-to-wear sizes. Fully approved regulation fabrics—tailored with the "know how" gained in serving Marine officers for three generations. Terms gladly extended. Mail orders promptly filled. Visit us or write for prices.

THE UNIFORM SHOP • ***MARINE CORPS EXCHANGE***
Operated By JOS. A. WILNER & CO. **Marine Corps Schools, Quantico, Va.**



Army Engineer operating collapsible aluminum combat bridge.

ON THE JOB . . . not "on the way"

This amazing bridge is of little value when the men who are trained to use it are delayed between assignments. That's why it's wise to get them *"on the job" five times faster* via the Scheduled Airlines.

It's sound economy, too. The Scheduled Airlines save the military millions of vital man-hours — which, in turn, saves millions in pay and per diem dollars. Compare the costs — the speed — the dependability of Scheduled flight with any other means of travel!

NEW LOWER INSURANCE RATES AVAILABLE ONLY ON SCHEDULED CERTIFICATED AIRLINES

Due to the consistent safety record of these Airlines, insurance rates have been reduced as follows:

$50,000 now costs only $2.00
$37,500 now costs only $1.50
$25,000 now costs only $1.00
$12,500 now costs only $ .50

Policies cover Stateside and much Foreign travel — personal or official.

10% DISCOUNT

for official travel on TR's . . . covers Full Service.

Saving the Military Millions of Vital Man Hours with Dependable, On-Time, *Scheduled Service* . . .

THE *Scheduled Certificated Airlines* OF THE U. S. A.

ALASKA AIRLINES
ALLEGHENY AIRLINES
AMERICAN AIRLINES
BONANZA AIR LINES
BRANIFF AIRWAYS
CAPITAL AIRLINES
CENTRAL AIRLINES
COLONIAL AIRLINES
CONTINENTAL AIR LINES

DELTA–C & S AIR LINES
EASTERN AIR LINES
FRONTIER AIRLINES
LAKE CENTRAL AIRLINES
MACKEY AIRLINES
MOHAWK AIRLINES
NATIONAL AIRLINES
NEW YORK AIRWAYS

NORTH CENTRAL AIRLINES
NORTHEAST AIRLINES
NORTHWEST ORIENT AIRLINES
OZARK AIR LINES
PACIFIC NORTHERN AIRLINES
PIEDMONT AIRLINES
PIONEER AIR LINES
RESORT AIRLINES

SOUTHERN AIRWAYS
SOUTHWEST AIRWAYS
TRANS-TEXAS AIRWAYS
TRANS WORLD AIRLINES
UNITED AIR LINES
WEST COAST AIRLINES
WESTERN AIR LINES
WIEN ALASKA AIRLINES

our authors

Because "too many people have the wrong concept of palletization," **LtCol Frank A. Long** has written *Why Pallets?* Colonel Long completed Basic School in 1941 and served overseas until 1944, mostly with the 3rd MarDiv. He was an instructor, Command & Staff Logistics Section at Quantico from 1944-46 and Division Embarkation Officer, 1st MarDiv in China from 1946-47. Since then, he has served as Logistics Officer in various units and more recently as Officer in Charge of both the Embarkation School (1950-51), and Logistics School, TTUPac (1951-52). He was Assistant G-4 and later a battalion CO in Korea until 1953. The Colonel is currently Logistics Coordinator, MCEC, Quantico.

LTCOL LONG

Lieutenant Colonel Gordon A. Hardwick lists as his writing background "a couple of articles, numerous rejection slips and a 70,000-word biography of Ghengis Khan." A product of the University of Minnesota (class of '39), he came into the Corps soon after graduating. Sea duty, the 2d MarDiv overseas, the Peleliu operation, New Zealand, Guadalcanal, Hawaii and routine duty and school accounted for his first ten years in the Corps. He was Head, General Supply Branch, Assistant Chief of Staff, G-4, HQMC, before being assigned as Director, Logistics Readiness and Training (NATO), Staff of SACLANT, Norfolk, Va., where he is currently serving.

LTCOL HARDWICK

Captain John E. Forde, Jr., saw the need for a uniform system of marking service record books and sat down and penned *Standardize the Marking System*. Captain Forde enlisted in 1940, was commissioned in 1944, reverted back to MSgt in 1947 and commissioned again in 1951. He holds the distinction of being the first 0371 (Infantry Operations Asst.) in the Corps and served in that capacity with the 1st MarDiv and at Norfolk until 1950. After his second commissioning he was Korea bound with the 14th Replacement Draft. Since returning to the states in 1952, he served with the 8th Marines at Camp Lejeune and is presently a company commander at MCRD, San Diego.

CAPT FORDE

Three Years Under the UCMJ was written by **LtCol O. V. Bergren.** Colonel Bergren entered Basic School from the University of North Dakota's ROTC in 1940. He was aboard the USS *West Virginia* at Pearl Harbor on December 7, 1941 and was with the 4th and 6th Marines overseas until he made the landing on Japan in 1945. The Colonel studied law at George Washington University and was graduated in 1949. He then was assigned to the Navy JAG's office where he assumed full legal duties. Now, after tours as Legal Officer at Camp Pendleton and student at Senior School, he is serving with the 1stMarDiv.

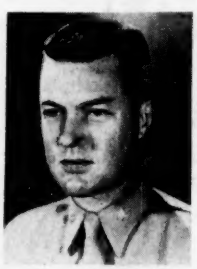
LTCOL BERGREN

Major Robert S. Stubbs II offers a solution to a much discussed problem in *Coordination—Not Subordination* (page 44). After Basic School, in 1943, the Major attended Radar School, Infantry School and Communications School. He was overseas from 1944 until 1946, and after a short tour at Camp Lejeune, was with the Department of the Pacific, San Francisco (1946-48); Bureau of Ships, Washington (1948-49) and with Military Law Division, JAG, Washington (1949-52). Besides an AB degree from the University of Alabama, the Major holds a JD degree from George Washington University. He is presently Instructor, Personnel & Administration and Military Law at Junior School, Quantico.

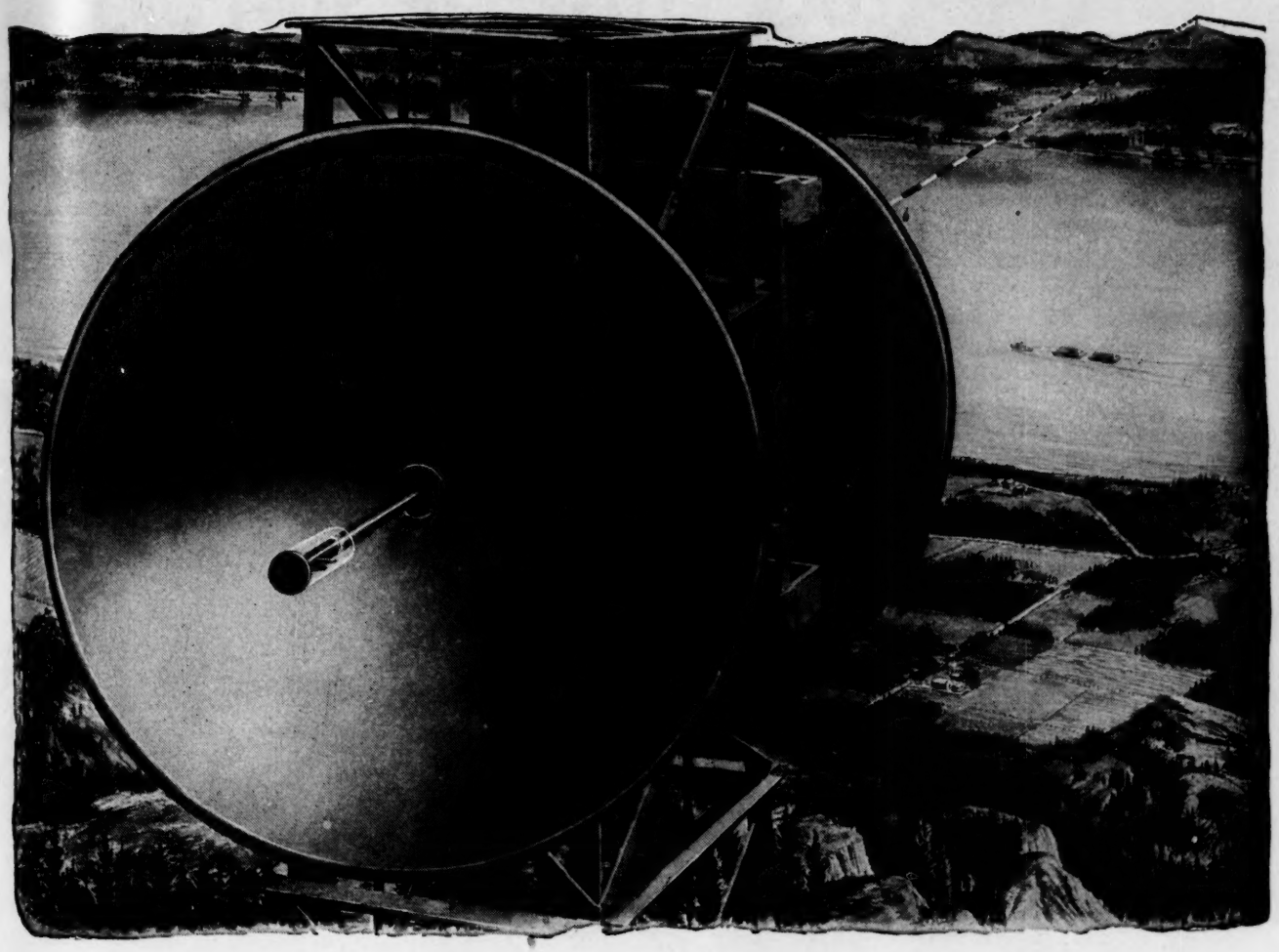
One of the recognized experts on the Armed Forces of the Soviet Union, **Garrett Underhill, Jr.**, has written *Red Armor* for the GAZETTE. Mr. Underhill was Technical Editor and later Chief Editor of Military Intelligence Service publications during WW II. He was cited by the Army in 1945 for "a broad knowledge of foreign armies, weapons, uniforms, equipment and insignia," and for "serving many Army and Navy agencies as an expert consultant in technical and military matters." Mr. Underhill has been interested in Russian armor ever since the Russian T-26 tank outgunned German panzers in Spain in 1937. He was a LIFE military reporter and later consultant to LIFE until the Korean situation.

MR. UNDERHILL

When **Major Bruce J. Matheson** was a wingman for the famed Greg "Pappy" Boyington in WW II, many operations were hampered because aircraft were incapable of all-weather flying. The Major's *Round the Clock Close Air Support* covers the all-weather flying problem from WW II through Korea. Major Matheson, after completing the Aviation Cadet program in 1943, flew an F4U in the battle of the Solomons. He attended Junior School in 1948 and was on Guam until 1950. His combined WW II and Korean exploits have netted him four DFCs, 16 Air Medals, a Letter of Commendation and the Purple Heart. In Korea the Major was the operations officer with an all-weather squadron. He is currently serving at MCAS, Kaneohe Bay, Hawaii.



MAJ MATHESON

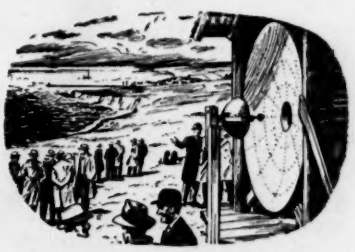


What every industrial executive should know about

MICROWAVE

In 1931, International Telephone and Telegraph Corporation became the world pioneer—the *first* to beam man's voice through space by microwave. Today microwave has become the fastest growing communications system for spanning mountains, swamps, rivers and other natural barriers without costly wire lines—a system that is virtually immune to storm damage.

And today IT&T is still the recognized leader, with its greatly advanced "pulse time multiplex" method of microwave transmission. If your company is planning to set up, expand or replace its own cross-country communication system, look first to PTM microwave. This versatile, flexible, new method provides for multiple speech channels, unattended telegraph, telemetering, remote control and other signaling. PTM microwave is available through *Federal Telephone and Radio Company*, a Division of IT&T.



IT&T engineers successfully demonstrate first voice transmission by microwave, Calais to Dover, March 31, 1931.

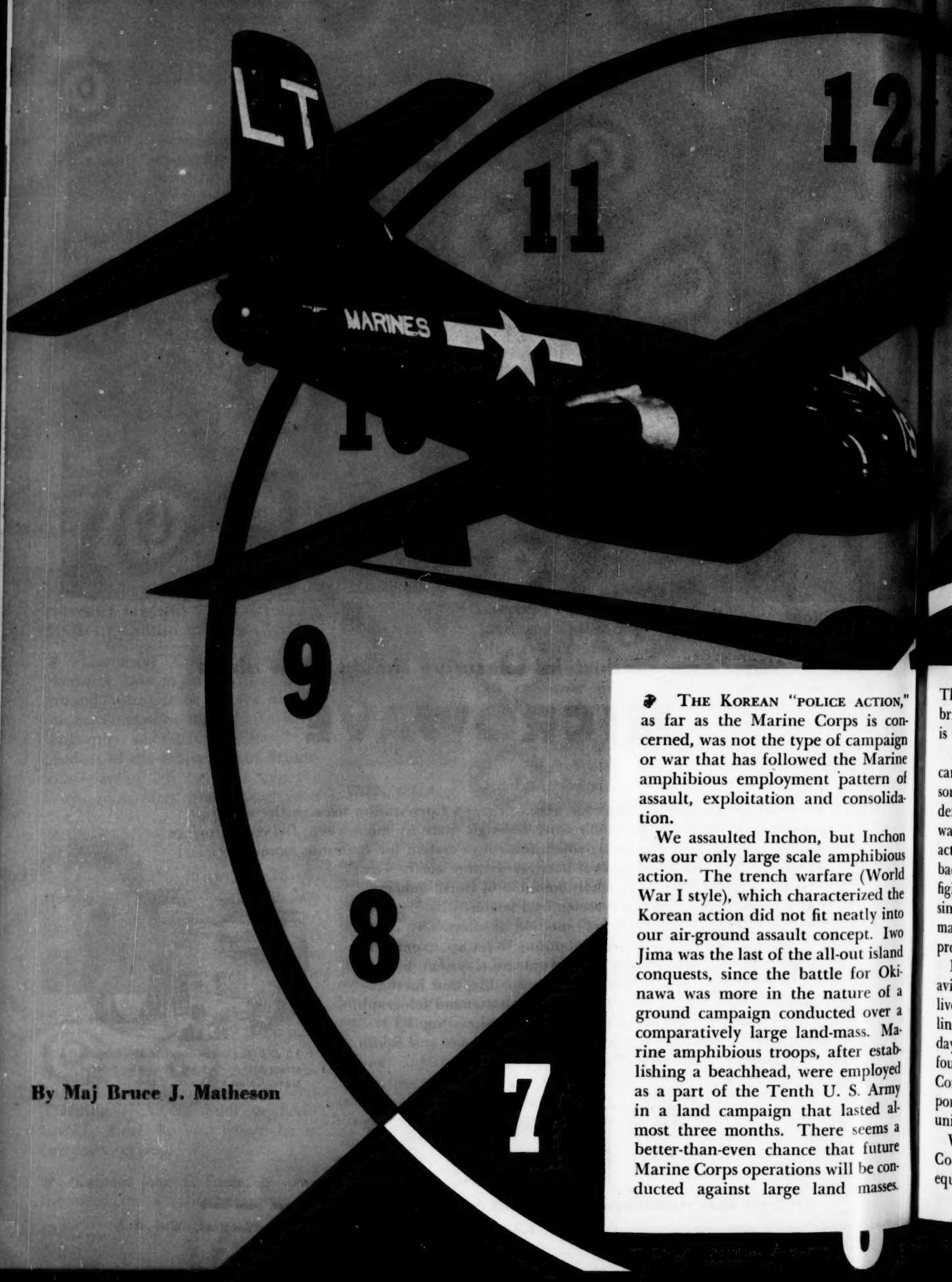
INTERNATIONAL TEL AND TEL

IT&T

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION. 67 Broad Street, New York

For information on microwave communication systems, address: *Federal Telephone and Radio Company*, 100 Kingsland Road, Clifton, N. J.

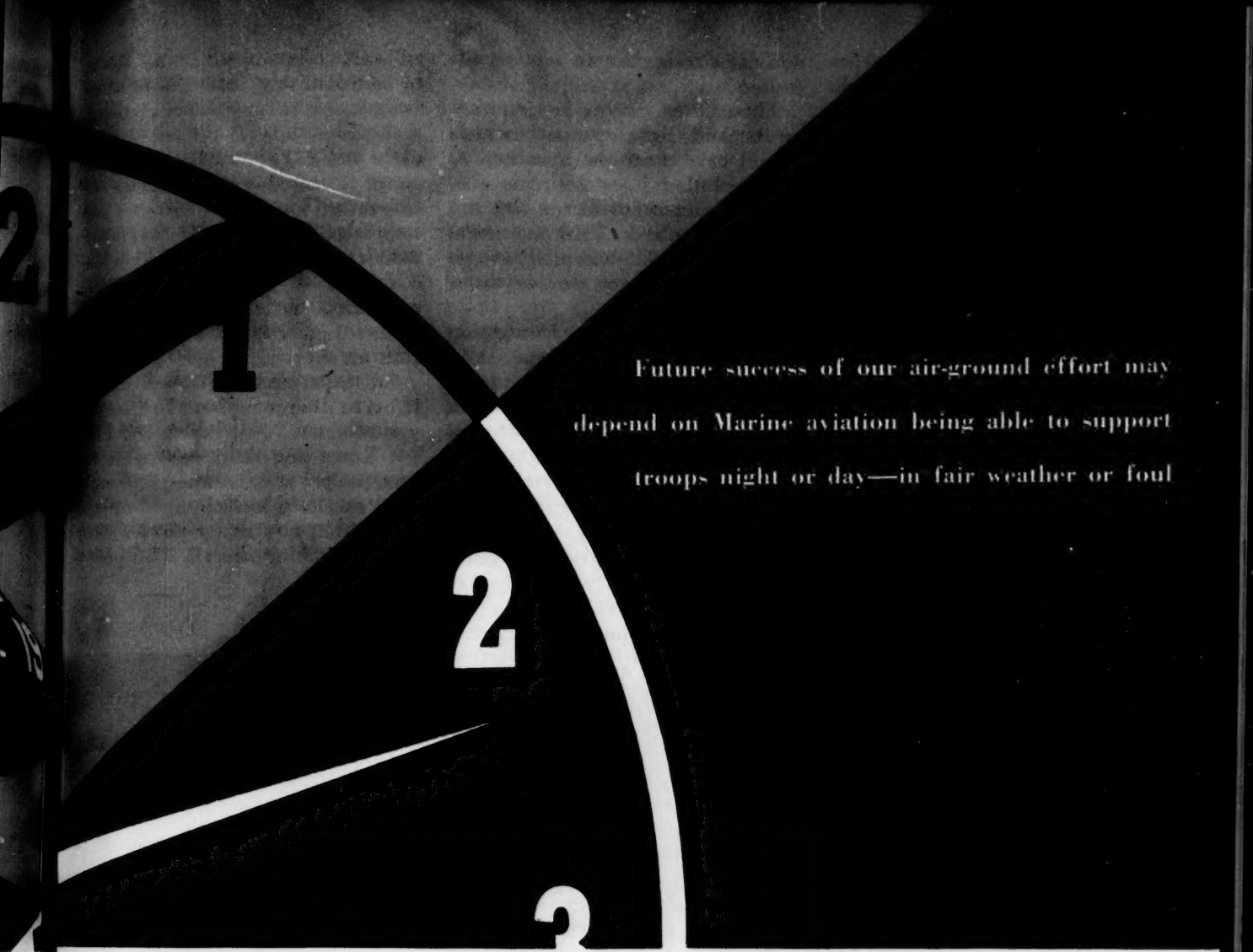
'ROUND-THE-CLOCK CLOSE AIR SUPPORT



By Maj Bruce J. Matheson

THE KOREAN "POLICE ACTION," as far as the Marine Corps is concerned, was not the type of campaign or war that has followed the Marine amphibious employment pattern of assault, exploitation and consolidation.

We assaulted Inchon, but Inchon was our only large scale amphibious action. The trench warfare (World War I style), which characterized the Korean action did not fit neatly into our air-ground assault concept. Iwo Jima was the last of the all-out island conquests, since the battle for Okinawa was more in the nature of a ground campaign conducted over a comparatively large land-mass. Marine amphibious troops, after establishing a beachhead, were employed as a part of the Tenth U. S. Army in a land campaign that lasted almost three months. There seems a better-than-even chance that future Marine Corps operations will be conducted against large land masses.



Future success of our air-ground effort may depend on Marine aviation being able to support troops night or day—in fair weather or foul

Therefore, let us turn our attention, briefly, to the part Marine aviation is to play in the future.

It is reasonable to assume that the campaigns of tomorrow will follow some of the trends which were evident in Korea. One of these trends was the increasing tempo of ground action observed during darkness and bad weather. Much of the heaviest fighting in Korea took place at night, since heavy artillery and mortar fire made daylight infantry engagements prohibitive.

It was necessary that Marine Corps aviation be on call and ready to deliver ordnance ahead of the main line of resistance at all times — both day and night, in fair weather or foul. Air support, as the Marine Corps knows it, means *close* air support — directly in front of supported units.

We have, at present, few Marine Corps squadrons trained and equipped to perform close air support at all hours and under all weather conditions. All of our attack squadrons can deliver maximum ordnance on a target expeditiously — but only during daylight and in good weather. Must our infantry resign themselves to seeing great quantities of air support roll in all day long; then at night, when the ground fighting begins in earnest, go without any help from their aviator contemporaries, at a time when close air support would pay off?

To find the answer to this seeming inconsistency — an air-ground team incorrectly geared to flying by day and ground fighting by night — let us examine briefly: first, past development of the all-weather capability concept; second, its role in the Korean war; third, the desired optimum in all-weather operations; and finally, a means of transforming this concept from a proposed capability to an actuality.

Prior to World War II, Marine aviation was a small and relatively stable force with a history of heroic and spectacular exploits. The tremendous expansion of the early 1940s saw Marine Corps aviation mushroom into a huge force of diversified components: fighters, bombers, transports, gliders and what have you. Included in this potpourri were night fighter squadrons whose sole function (and one capably discharged) was the destruction of enemy aircraft at night. The close air support technique was developed to the point where, had there been an invasion of Japan proper, eight Marine carrier air groups, trained and ready, were to support the landings on the Japanese home islands.

The reduction of Marine Corps strength in the post-World War II years did not retard close air support training. But they did bring mistakes and faulty procedures to light — Marine Corps aviation between 1946 and June of 1950 was one large

proving and testing vehicle for the perfection of close air support techniques.

The all-weather concept was reaffirmed and accelerated. All-weather, as understood by the author, includes not only the hours of darkness, but those daylight weather conditions which involve obscuration of ground targets due to cloud layers between the aircraft and the ground. A step in the direction of its fulfillment was taken when fighter and attack pilots, in addition to studying bad weather, began to fly in it. However, due to limited appropriations which did not allow maximum utilization of available aircraft, the lion's share of the all-too-few training hours went into gunnery and bombing proficiency—rightly so, since an aviator unable to employ his primary weapons effectively is useless.

Control squadrons were expanded and integrated smoothly into the air wings, and soon the functions of the Tactical Air Control Center — the Tactical Air Controller, Airborne — the Tactical Air Control Party and all the other ground and air agencies concerned with control and direction of tactical aircraft, were understood — even by the newest pilots.

This period saw also the development of ground-controlled-approach; a system of directing an aircraft to a landing runway through the use of both height-finding and directional radars. As well as close air support radars (MPQ), which enabled a qualified pilot to leave his base, fly to — drop a bomb load on — and return from a target, and land safely; without ever having seen the ground.

The last stride made toward the all-weather capability was the introduction of jet aircraft to the Marine Corps. In some respects these aircraft were much better suited for all-around close air support, since they climbed through weather quickly, were more stable than their propeller-driven predecessors and had more up-to-date instrumentation. These advantages were slightly offset by certain inherent disadvantageous characteristics of the jet, such as limited "on station" time as a result of high fuel consumption and comparatively short range when carrying a heavy ordnance load. The disadvantages were found acceptable, and the jet took its rightful place as a leader among close air support aircraft.

These, then, were the improvements and developments which should have made the transition to an all-weather force a simple one. But one important factor had not yet been resolved. That was transforming the individual pilot into an all-weather pilot, and here we found our major obstacle.

Night flying and instrument flying — the only two additional skills which, when mastered, distinguish the all-weather pilot — were the villains. A CNO directive requires all Naval Aviators to fly 15 night hours as part of their 100 hours' minimum flight time per fiscal year. This office also requires each Naval Aviator to maintain a valid instrument rating. Failure to comply with either of these requirements results in the aviator being summoned before a disposition board for reclassification. But, though the directive is well-intended and effective, and will force the aviator to fly his "minimums," it will not make him an all-weather pilot. He must, first, complete an all-weather training syllabus, which requires concentrated periods of instrument and night flying. This is in addition to mastery of all his old day flying techniques, now flown in a different environment — darkness and bad weather.

THIS WAS THE Marine aviation situation in June 1950—capable aircraft, capable ground control agencies and pilots, who basically had the all-weather capability, but had not been required or permitted to develop it.

Elements of the First Marine Aircraft Wing, deployed to Korea soon after the outbreak of the Korean war, included an all-weather squadron which performed creditably. Actually, two all-weather fighter squadrons, VMF(N) 513 and VMF(N) 542, were employed in Korea between September 1950 and February 1951, but 513 was the only all-weather squadron in Korea for the entire period — August 1950 until date of writing. The all-weather F4Us and F7Fs were flown day and night on a variety of missions: support of the front lines, armed reconnaissance of Communist main supply routes, deep support strikes against supply and personnel areas and anti-truck and rail strikes (performed under flares). In addition, they managed to shoot down a few enemy planes at night.

However, all of the all-weather F4Us and F7Fs were finally phased out of Korea, and in their place the all-weather squadron received a full complement of the F3D Skyknight, twin-jet interceptor. Now the Marines had an all-weather defensive capability, but their new airplane was neither designed nor suited for close air support.

An experiment utilizing searchlights to illuminate front line targets was conducted just before the F7Fs left Korea and the results were exceptionally satisfactory — not only were excellent hits obtained on the targets, but no damage was incurred by participating aircraft. This points

All-weat port

to a rather logical conclusion; i.e., if the enemy can't see you, he can't hit you, or at least, his sighting problem will be much more difficult. A study of available flak damage statistics shows that not one close air support aircraft was hit by flak *at night* in almost a year. Day flak damage suffered while delivering support to the MLR area was considerable and accounted for the loss of many aircraft and their crews. To hit an aircraft at night, excluding the ever present factor of the anti-aircraft round being aimed at "To Whom It May Concern," the enemy must employ both height-finding and tracking radars, which makes for a rather expensive and bulky front line defense. Conversely, to hit an aircraft during daylight one needs only

"crank in" enough lead and let fly; the element of surprise is lost.

To supplement the night fighter work in Korea, a handful of attack pilots were trained to perform night MPQ, but their sorties were flown only in good weather. Thus, it was common for a string of three or four nights to go by with not one bomb being delivered after dark by Marine Corps aircraft.

So far, the following situation prevailed:

1. An all-weather defensive capability, in being.
2. Negligible all-weather offensive (support) capability.
3. A need for all-weather support of the infantry, in addition to those interdiction and deep support missions which will always be needed.

has resulted in no other benefit to Marine Corps aviation, it has proved that tactical aircraft *can* be flown, directed and controlled at night and in inclement weather.

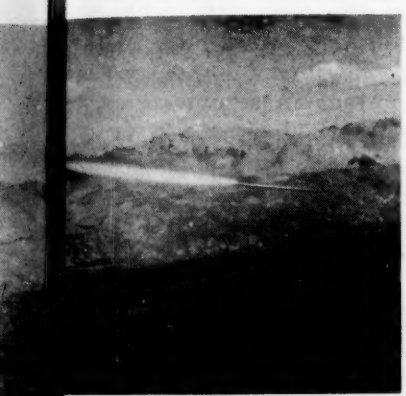
Second, to make the all-weather concept a reality, implementation must come from the top down. Mastery of all-weather flying is indicated — why not dig in and learn it? Our pilots are competent and well-trained. Would it not be good military business to teach *all* of them all-weather techniques? Not just a few pilots each year, but all Marine aviators should be given the opportunity to undergo all-weather training consisting mainly of night and instrument flying. In short order, we would have all of our pilots all-weather trained, and future deployment wouldn't be complicated by

stacles to an all-weather force, but one that must be overcome.

The final deficiency is the ground control and direction equipment and techniques which would be necessary for handling large flights of tactical aircraft at night and in poor weather.

None of these problems and considerations are individually substantial enough to prevent rapid conversion from our present readiness status to an all-weather status. Collectively, they represent a barrier which will take the combined effort of all the planning agencies of the Marine air arm to shatter.

Let us use Korea as our latest lesson in modern warfare while we still have the opportunity! Our strategists must not forget that offensive air power in North Korean skies has



. . . at all hours, under all conditions

port capability

In order to reconcile items two and three above, it appears that our system of flying well over 90 per cent of all Marine Corps tactical sorties during daylight hours should have been adjusted to bring the ratio of day to night combat flying into more favorable balance.

We needed an actual force capable of sustained night and all-weather effort. We needed control techniques that would permit large flights to be directed and controlled at night, either individually or in formation.

What must be done to furnish the Marine Corps with an aviation arm capable of around-the-clock support?

First, the all-weather support capability must be more than a concept which exists only in the minds of Marine aviation leaders. If Korea

trying to separate the night flyers from the day flyers.

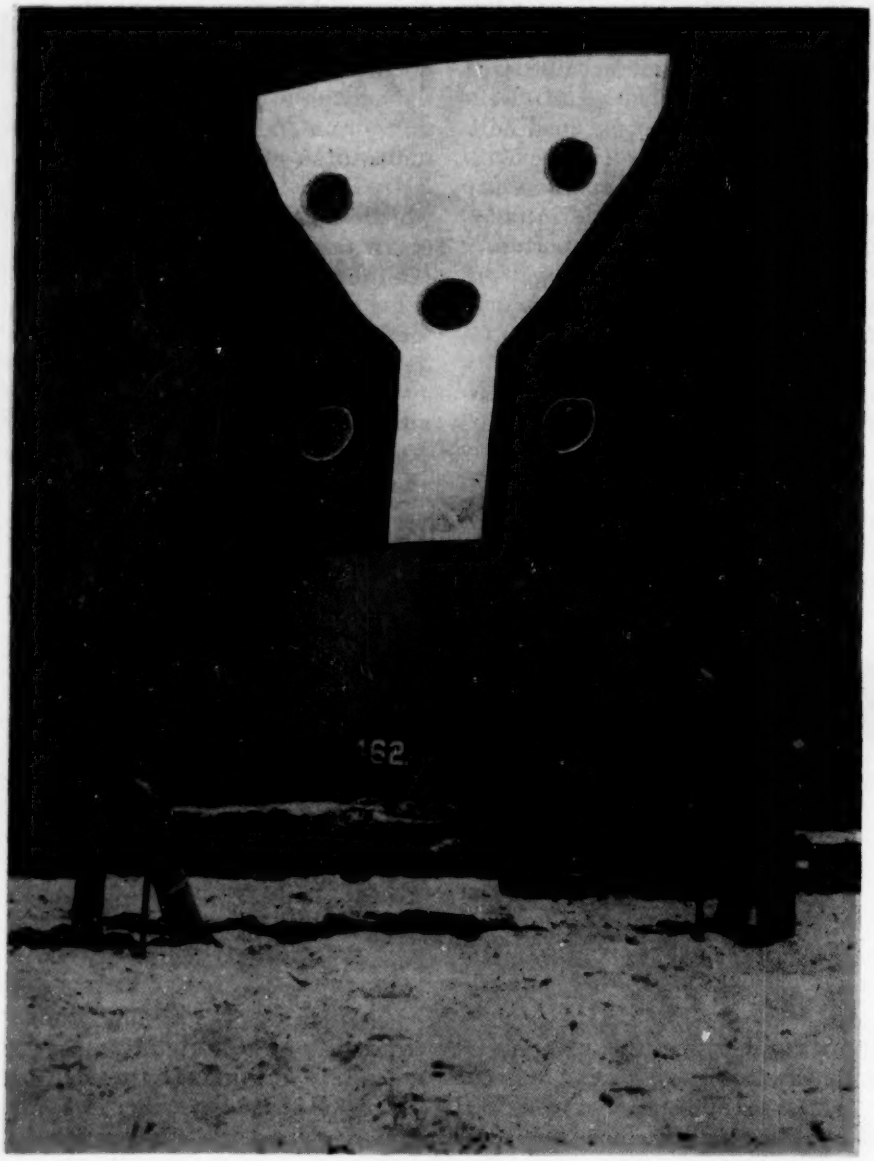
Third, extra instrument flying and navigational equipment is needed in some modern tactical aircraft to allow all-weather employment. Satisfactory instruments are available and are installed in the all-weather interceptors. Their incorporation in attack aircraft would certainly seem an acceptable addition to the weight and complexity of those aircraft if this incorporation meant the difference between delivery or non-delivery of all-weather support.

Another problem, which will take much thought and experimentation, is successful rendezvousing and area or formation flying of large groups of attack aircraft at night or during bad weather conditions. This is one of the most difficult of all the ob-

enjoyed the tactical advantage of practically complete freedom to bomb and strafe any target in North Korea without fear of effective enemy fighter interception. Should our next enemy possess the capability of determined and effective air defense over his territory, we might well find the cost of daylight operations prohibitive!

We have seen that the enemy will fight on the ground at night, and we assume that he will continue to do so as long as artillery makes daylight infantry engagements a suicidal matter. Further assuming that future wars will be fought along these general lines, it appears that the success of our co-ordinated air-ground effort may well depend on Marine aviation being capable of around-the-clock close air support. USMC

WHY PALLETS?



For effective amphibious p ng,

manpower and valuable tim oving

WE ENTERED THE INITIAL AMphibious campaigns of World War II with a sound amphibious doctrine, but we lacked experience and developed techniques in the field of logistics.

The early campaigns introduced planners to the magnitude of problems inherent in lifting and landing tonnages commensurate with assigned missions, but the task of maintaining a continuous flow of supplies in support of an assault against a heavily defended beach was yet to be encountered.

A new situation presented itself and new techniques had to be developed, for the situation now included strong and fanatical enemy defense of beaches and adverse hydrographical conditions in the form of coral reefs. Then too, there was little cover or concealment available on the beaches themselves, with an ever increasing requirement for controlled unloading and a continuous, as well as flexible, supply system during the assault phase. These requirements had to be filled while keeping the number of Shore Party and serv-

By LtCol Frank A. Long

ng, the use of pallets saves

oving vital supplies ashore

ice personnel committed to a contested beach at a minimum.

The logistical paradox brought about by the above conditions and requirements, when reduced to its simplest form, required that the planners deliver supplies in any quantity requested, under any and all conditions. Thus, fewer personnel were to be employed initially on the beaches for a task far more difficult than any previously encountered.

In order to provide a solution to this complex problem, four essential elements had to be re-evaluated — organization, control, utilization of existing equipment and speed of cargo handling. It is not within the purview of this article to analyze the results of the changes which arose from a study of the first three. Instead, we will summarize by stating that our present system of controlled unloading and Shore Party doctrine, which was to a great extent born at that time, alleviated tremendously the logistical problem at hand.

The mercurial movement of cargo across a beach is not only contingent upon Shore Party organization, control and equipment, but to a major extent upon the types of cargo to be moved and its packaging. All factors contributing to the element of speed demanded a re-evaluation. The employment of pallets, as a means to an end, surely fell within the scope of such a study.

The use of pallets in future amphibious operations would be no innovation. All types had been employed heretofore with varying degrees of success. The ever increasing use of amphibious vehicles certainly facilitated the transport of cargo across reefs. The mechanization of the Shore Party was a tremendous adjunct to its mobility.

Today, as in the early '40s, the percentage of palletized supplies to be lifted in assault shipping bears careful consideration. Assuming this statement to be valid, let's review these considerations. In this discussion we will consider only the standard four-by-six-foot, sled pallet which is predominantly the type used in assault operations and which, when loaded, is limited to a gross weight of approximately 2,200 pounds.

Supplies which most readily lend themselves to palletization.

Only items of regular shape, internally strong enough to maintain their shape under pressure (expeditionary cans, ammunition containers, etc.) readily fall into this category. The one notable exception to this rule are fortification materials—concertinas, sandbags, barbed wire and pickets. In their case, the difficult and time consuming task of repeatedly handling such items outweighs the undesirable characteristics they demonstrate when palletized. For these reasons and because of their relatively low priority, it is not uncommon to find in Administrative Orders "Fortification Materials — 100 per cent Palletized."

Space Requirements.

There can be no doubt about the loss of shipboard space when considering palletization if we use loose stowed cargo in comparison. Some authorities quote a broken stowage factor as high as 40 per cent. The validity of this argument can be appreciated in view of the fact that it is seldom feasible to stack pallets over two high. Since pallets are normally limited to 40 inches in height, only 80 inches of cargo in the average hold section wastes considerable space. Currently, and in connection with defense against atomic weapons, thinking is leaning strongly toward mobile loading of assault supplies. Because of the characteristics of present day APAs and AKAs, the broken storage factor applicable to vehicular loads is extremely high — by comparison, the stowage of palletized cargo is more efficient.

Further, many prerequisites must be met before mobile loaded supplies, on wheeled vehicles, can be effectively employed ashore. Pallets can be landed by amphibious vehicles even over reefs and towed by LVTs once ashore. An interesting aspect of the space saving question is found in one test report which states, "While the shipping space is not utilized with palletized supplies to the extent it is in a commercial load,

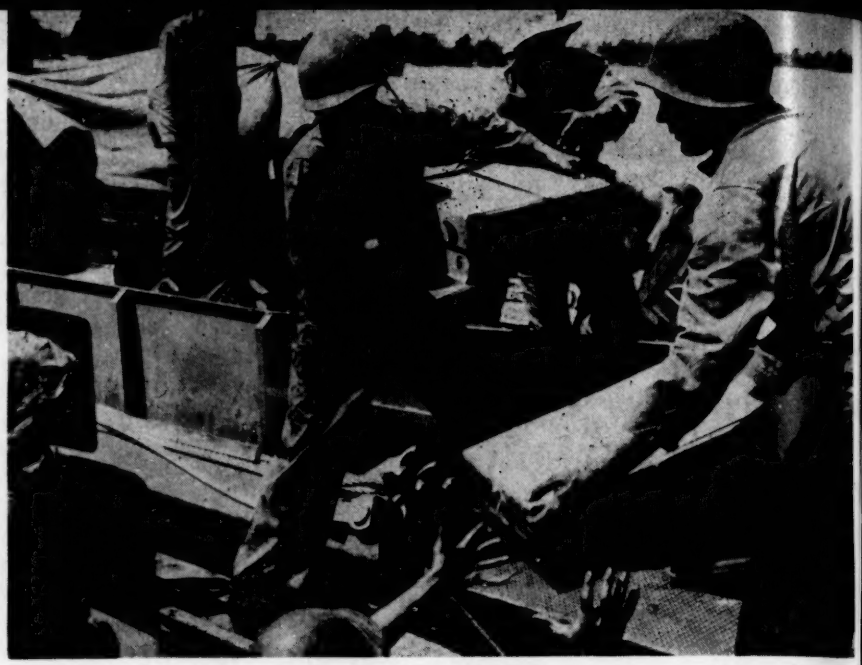
at least a portion of, and possibly more than, the equivalent of the space not actually utilized is saved by the resulting conservation of supplies with the reduction, by palletization, of loss, spoilage, waste, breakage and pilferage."

Material Requirements and Loading Times.

Any logistician or commander who is considering the use of pallets will do well to first investigate the availability of three prerequisites: material for pallet construction, construction personnel and time. It is one thing to include in a division administrative plan a directive to palletize, for example, one day's "C" rations and one unit of fire. It is another thing to accomplish this. The bill of material for palletizing these small levels amounts to approximately: 126,800 board feet of lumber, 158,500 feet of banding (1.5 by .034 inch), 50,720 feet of half-inch cable and 6,340 cable clamps.

The production of sled pallets for use by a division based outside the continental United States would undoubtedly rest with the Engineer Battalion augmented possibly by personnel from the Shore Party Battalion and Service Command units, if available. Research by the author failed to produce any data on the production rate attained by FMF units of the sled-type pallets. Needless to say, however, pallet construction in quantities commensurate with any appreciable degree of palletization of division supplies would be a major undertaking.

The loading of supplies on the individual pallets is normally supervised by the several supply agencies peculiar to our division – Ration Platoon, Ammunition Company, Engineer Supply Platoon, etc. Because of their limited personnel, however, it was found necessary to augment them with personnel from other sources. Too much emphasis cannot be placed on the importance of this step. Pallets are repeatedly subjected to rough handling. The resulting shock effect will invariably result in a disintegrating load unless supplies are properly stacked and banded. To provide the readers with an appreciation of the magnitude of this loading process, the following quote from a division report of World War II is offered: "Over a seven-week period a total of 4,174 sled loads of supplies were prepared. At the peak of the palletizing operation 750 men were employed."



Lost: effectives and efficiency

Mechanized Equipment Required for Handling.

The weight of loaded pallets combined with the necessity for moving and stacking them within hold sections makes it extremely desirable that at least one fork lift truck per hold be available. The responsibility for providing these trucks rests with the Navy. The cognizant troop commanders, however, must make their needs known early in the planning phase in order that these requirements may be met. Rollers or conveyors may be used in lieu of fork lift trucks, but such methods are extremely difficult and time consuming.

Where it is necessary, because of reefs, to transfer pallets from barges or landing craft to amphibious vehicles, we encounter an operation which can be conducted only under favorable sea conditions. The weight, configuration and concentrated mass of a pallet, when suspended from a floating crane, makes handling a hazardous procedure.

On the beach itself the unloading of pallets from landing craft and amphibious vehicles may be handled in several ways. They may be towed singularly or in tandem from landing craft and LVTs by tractors or LVTs themselves, or be lifted from DUKWs by the use of cranes. In cases where palletization to a marked degree is contemplated, a careful analysis must be made as to the number of cranes and tractors required for their movement from unloading points to beach or inland dumps. On more than one occasion during World War II, palletized supplies got only as far as the high water mark. The lack of adequate equipment for their further movement inland demanded that strapping be broken and the pallet load be unloaded by hand.

Waterproofing

We have previously discussed the material and time consuming process of palletizing supplies. In the event that such supplies are susceptible to salt water damage, or for that matter easily subject to deterioration from dampness, then waterproofing is in order. From past experience we know that moisture, from one source or another, has taken its toll of supplies in amphibious operations. This has been particularly true in the case of rations, certain "spares" and ammunition which are drawn on and expended over a period of time in the objective area. Waterproofed and palletized supplies are in effect transported, stored and preserved in their own mobile warehouses – the sleds and decking remove them from surface water contacts, the waterproof paper from rain, spray or dew. During the last war, two methods for waterproofing palletized supplies were generaly employed. One util-

ized a prefabricated waterproofed burlap pallet cover (Bemis bag) whose dimensions were four-by-six-by-three feet. This ready-made cover expedited tremendously the waterproofing process.

The second method, employed when Bemis bags were not available, utilized "Sisal Kraft" paper. One sheet, 60 inches wide, was placed around the long axis of the load with another sheet, 96 inches in width, around the short axis; joining and sealing these sheets was accomplished by the use of asphalt cement. Depending upon the amount of waterproofing desired, we have then, additional material and labor requirements to add to those heretofore discussed. Today, in the light of ever increasing requirements, the entire field of waterproofing is undergoing continuing research and progress. We can be certain that our future needs will be met with new, improved materials and methods.

Economy in manpower.

Certainly the chief advantage connected with the employment of palletized cargo lies in the resulting decrease in the need for labor troops which would otherwise be required to manhandle comparable tonnages on the beach. This aspect is particularly desirable during the initial phases of a beach assault when the beach itself is still receiving enemy fire, and during which it is not feasible to land appreciable numbers of cargo vehicles.

One World War II report went so far as to state that "the outstanding feature of palletization was the reduction in personnel exposed on the beaches. Whereas under old methods, 50 or 60 men would have been used to move these supplies across the beach, only nine tractor drivers and their assistants were exposed. The beach was kept clear and supplies were placed in dumps in minimum time."

Time-space

No discussion of palletization would be complete without considering its effects on the time-space factors involved during the unloading phase of an amphibious operation. Few discussions can invoke so many variables and diverse opinions. Foresight, hydrography, detailed planning, adequate equipment, proper maintenance and thorough training are all necessary prerequisites if palletization is to work for us where the expenditure of time is a concern. Briefly, and without resorting to mathematics and empirical formulas in the development of our time study, let's consider instead the following two situations.

First, let us consider that the above mentioned prerequisites have been met and the hydrography favors the attacker – good gradient and no reefs. A trained winchman and fork lift truck operator quickly load 36 loaded pallets (36 tons of supplies) onto an LCU. The "U," clipping off ten knots, makes its run to the beach where tractors are waiting – bridles are snapped onto tractor hitches and two pallets at a time, in tandem, are towed to the beach dumps. The end result is a negligible expenditure of time and manpower.

Next, let us suppose that pallets and cargo were damaged during the ship loading period — with cargo loose on pallets. Either improper maintenance or inadequate operator training causes failure of forklift truck—pallet must be placed on rollers and moved by manpower to the square of the hatch. While being lowered over the side, package of loose supplies falls on and injures boat crewman. Existence of a reef requires transfer operations to an LVT—more loose cargo lost in transfer. Failure of tractor on beach requires strapping to be broken and palletized cargo to be unloaded by hand. Invaluable time, manpower and material lost is the result.

The two situations portrayed above, while ranging from the sublime to the ridiculous, have occurred on the same operation in the past and it is not too improbable that they may recur in the future. The choice of results is up to us.

Reduction of pilfering hazard.

Depending upon the degree to which palletization is employed, this factor may assume major proportions especially in the case of rations. World War II reports, virtually in every instance where supplies were palletized, contained statements to the effect that pilferage was negligible. Here then is another desirable aspect of palletization.

The basic considerations discussed above review the primary factors which contribute to the pros and cons of the subject. The study of palletization is an enormous one. Research and tests are being conducted continually by all services as well as by industry. This article has obviously only touched on the subject. Problems that are encountered today in handling palletized supplies may be eliminated tomorrow. Changes in ships' characteristics and cargo handling equipment may well provide the answers. However, until such time as these changes take place, palletization in its present state has much to offer the amphibious planner. It is a tool of the logistician's trade—a means to an end. We must, as in the case of other tools, recognize its prerequisites together with its capabilities and limitations if palletization is to be effectively employed. USMC

Gained: time and space

There are no plush seats or fancy fixings in Soviet tanks, but they can do a bang-up job. Here's the dope on . . . .

RED ARMOR

By Garrett Underhill

DO YOU KNOW WHAT IT'S LIKE TO be hit by a real Red tank "blitz?"

Marines have experienced Pacific island fighting, in which the Japs mis-used little "tin-plate" tanks. In Korea, Marines have run into Reds who've sometimes used World War II Soviet tanks for infantry support. Besides these T-34 tanks with 85mm guns, Marines have also met in Korea some Soviet SU-76s—World War II makeshift self-propelled guns, which mount a 76mm field gun on a chassis that was a failure as the T-70 light tank.

But what do Marines know of the Reds' real "blitz" outfits, their equipment and methods?

What do they know of the Soviet Army's Tank Division, with its tank regiments replete not just with T-34s, but with turretless heavy 152mm gun tanks to back up the '34s?

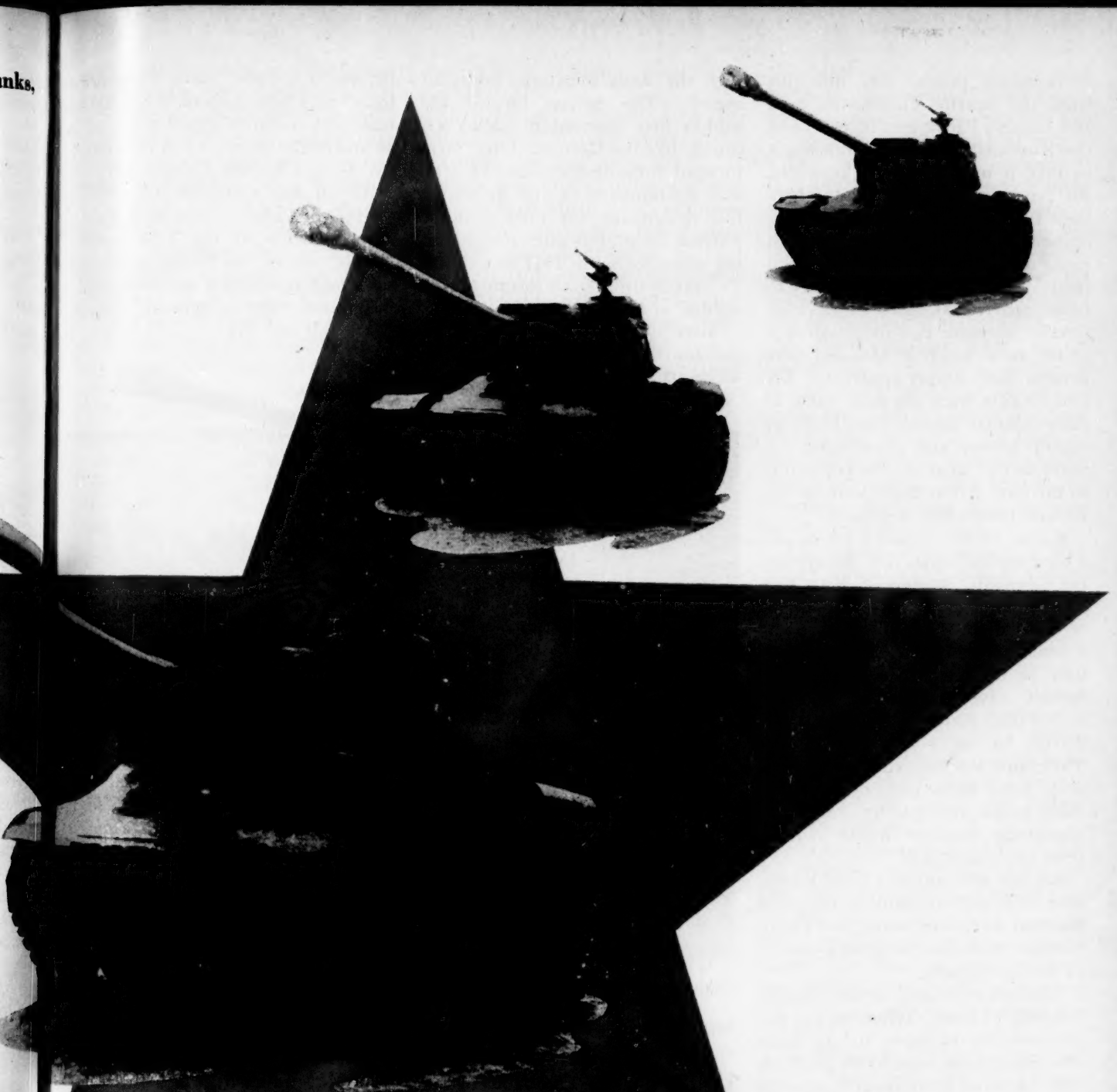
And how about the Tank Division's "monster rally;" its Heavy Tank Self-Propelled Regiment—an array of heavy Stalin tanks with 122mm guns, teamed with low-lying turretless 100mm gun tanks? This is the organization controlling what the Russians think is the best for tank vs tank fighting.

What of the Soviets' Mechanized Division, with fewer tank regiments in its "mobile armored punch" than the Tank Division, but with more infantry outfits to hold ground and to take ground the tank outfits themselves can't overrun?

For that matter, what do Marines really know about the tank-type support in the "Rifle Division"—the Soviet Army equivalent of U. S. Army infantry divisions?

For the Reds haven't shown us their whole technical and tactical hand in Korea. They've kept their best armor and best tactics up their sleeves.

When formed in '49-'50, the Korean infantry divisions got only T-34 tanks, instead of a tank regiment of T-34s backed by SU-100s (such as does the punching for post VJ Day-type Russian Rifle Divisions). Quite unknown, in Korea, have been the tactics made possible by this teaming of tanks and heavy gun SUs—a system of backing medium tanks with heavy-gunned turretless tanks. The system was perfected by the Soviets in battling Germans in '43-'45. It has long been SOP for all types of Soviet Army divisions.



Marines ... [illegible] ... Soviet divisions ... [illegible] ... of being ... armor ... Soviet-type ... ized Armored ... which ... hours alert ... Germany, ... to rip out to- ... and Mediterranean. If the Reds should open up the Korean "conflict" again, they might well send in their first team—their elite Tank and Mechanized Troops—in mobile armored formations tailored for the terrain.

This isn't any idle speculation. We've all heard from the USAF about the masses of Red MIG jet fighters and light Il-28 jet bombers, ... threat ... few ha... Reds them... years ago, to ... forces—on Soviet ...

This Chinese arm... cern us more than Red ... men have had considerab... ence with that air, albeit far ... conclusive. But we've never been ... with heavy Stalin tanks and heavy-gunned SUs, such as the Chinese paraded openly in Peking as far back as August, 1951. We don't really know what the Reds can do with such armor—*if they try*. It's important to realize that the Red tankers we met in the early "tank phase" of the Korean conflict were poor by Soviet standards. On a Soviet War Ministry training inspection test, they'd have rated about two points out of a possible five point score. ... good training, "first team" ... and tanks—and close jet ... bomber and light bomber ...—who's to say how hot Red ... could make thing for us?

... without saying that we've also ... to worry about Soviet Russia's ... divisions in Asia, too. If the Korean war should open up, they might come pouring onto the

Manchurian plains, and not just from the nearby Vladivostok area and Russia's Pacific provinces. When the Russians swept into Manchuria to take it over from the Japanese, the powerful Lake Baikal mechanized forces swept out of Siberia, crossed the Khingan Range (with peaks of up to 5,000 ft.) without roads. They rushed cross-country to cover nearly 200 miles of trackless terrain in under two days. Air-supplied, they reached Mukden (the present Red supply center for Korea) 11 days from the start—some of their infantry having been lifted by supply planes and parachuted the previous day, so as to seize key points in the city. Soviet tanks were on the Korean border two days later.

These Soviet armored forces are a big question mark, too. Except for the Germans, Westerners have had no first-hand experience with them, or with their big-gun tanks. Even German World War II experience may be outdated. Since then, the Soviets have reorganized and rearmed their forces. More important, for the last eight years these Soviet Tank and Mechanized Troops divisions have been training at boot-camp tempo, trying to bring up their admittedly deficient World War II level of tactical skill.

All this adds up to a good reason why U. S. military authorities mean business when they warn: don't take Korean experience as a sure sample of foreign fighting.

Marines, especially, should take this warning to heart. When we use our sea mobility to move in and seize strategic points, most likely the Reds will be using their mobile armored forces to get there "fustest"—and to try and outslug and overrun us when we get ashore.

That's what the Germans almost invariably did in Europe in World War II. The "Hermann Goering" Panzer Division struck at Gela to make the most of the critical moment of the Sicily landing. The 14th Panzers, though very weak, nevertheless made things touchy at Salerno. The 12th SS PzDiv and Twenty-first Army tanks, plus the Panzer "Lehr," failed to foil—but did contain—the Normandy beachhead.

As a matter of fact, Russian and German thinking on armored mobile warfare have run parallel through 20 years of development, with the Reds sometimes well out ahead. (The Soviets formed the world's first armored division.) Of course, like the German "blitz" men, forward-thinking Russians like Marshal Rotminstrov at first didn't get full recognition for their armored warfare ideas. But after the trouncing given Russia in 1941 by German Panzers, Stalin started forming "tank armies" of his own.

After VJ Day, Stalin began a gradual conversion of the Soviet Army with its infantry-artillery masses. He's changed them into mobile-type forces based more and more on armor. Today, it's said that at least 65 to 70 of Soviet Russia's 175 divisions are of armored "Tank" or "Mechanized" type. For years now, 18 of the 20 Soviet divisions in Occupied Germany have been armored.

What of the tanks these Red divisions use?

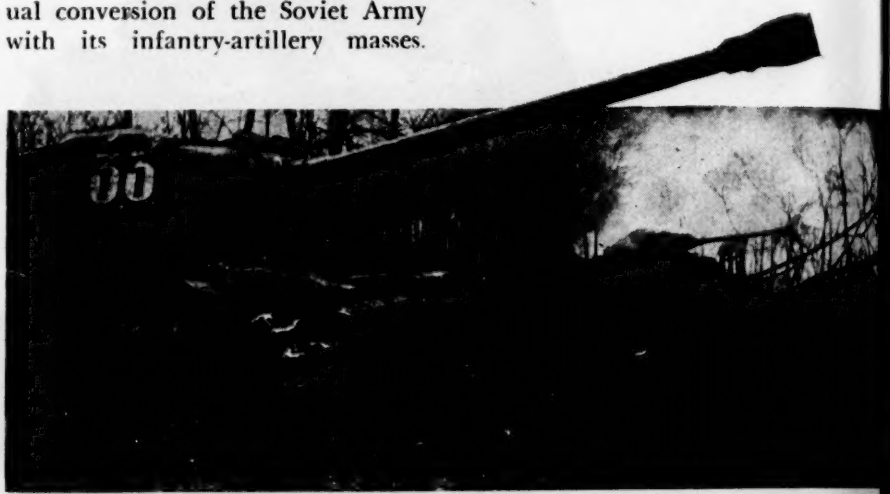
MEDIUMS

The T-34 has long been the principal Red tank. Thousands of them exist in the hands of Russia and her satellites. They'll be encountered for years, even after new model Red tanks come into service.

The "34" is an old tank. Baldheaded Alex Morosov mocked up a working model of its then-revolutionary-shaped hull back in March, 1937. He finished up design in 1938-39. She was in service in '40, went into action against the Germans in June '41.

She thus dates *before* our main World War II tank, the M4 Sherman. The Sherman got into action late in '42. It was a 1941 re-design of the poorly laid out M3 Lee, which we cooked up in haste after the German "blitz" in France of May, 1940. Before that, our main "armored force" tank had been an 11-ton light tank with one-inch armor and a cal. 30 and cal. 50 Browning in its turret. (In '41, this became a 37mm gun.)

As for the Germans, Guderian, "Father of Panzers," told us that the surprise debut of the T-34 caused "panic" among the Germans. Morosov's tank completely outclassed and outgunned the Germans famed Mark IIIs and IVs.



Stalin I—the KV in a new package

Originally the T-34 had a long 76mm gun, 1⅞-inch thick hull armor plate and weighed in at 32 tons—same weight as a 75mm gun Sherman.

The present T-34 has a big turret with an 85mm gun. It first saw action in May of '44. It's noteworthy that our tank workhorses of Korea—the "Easy-Eight" Shermans—didn't get into action with their 76mm guns till late '44.

With the new 85mm gun turret, the T-34 weighed in at a little over 35 tons, the Soviets tell us. (Don't be confused if you ever see in a T-34 handbook that she weighs 32 tons. That's the Reds' metric 2,200 lb. ton.) Adding these three tons to the original 32-ton weight spoils the T-34's original handiness a bit. For with her broad 20-inch tracks (as vs the Sherman's World War II 16-inch), the original T-34 was very light on her feet—a characteristic the Russians stress because of their roadless wastes, so often turned into seas of mud in spring and fall. Nevertheless, the T-34 is still close to her original ten pounds per square inch ground pressure, and even outshines our new post-Korea tank "family" in this respect. But her engine is bound

to be a bit hampered, and her horsepower-weight ratio (originally that of a Sherman) stands at a little more than 14 h.p. per ton. (A Patton runs 16 or better—as compared to a passenger auto like a Nash Rambler, with 72 h.p. per ton.) The "34" can still work in snow a yard deep, although like other Red armor she isn't adapted to desert-type conditions.

The engine is a Soviet marvel that the German tankers demanded when they saw it: a lightweight V-12 aluminum 500 h.p. Diesel. It gives the "34" a strikingly low fuel consumption: ¾ of a gallon per mile, even cross-country.

Compare that to the fuel mileage of a gasoline-wolfing low-compression 800 h.p. Patton engine, whose torque converter transmission hardly helps to cut down fuel consumption, (over three gallons per mile).

T-34: it made the Soviets world leaders in tank design

The Soviets emphasize that diesel fuel is less of a fire hazard than gas, but what they like best is this fuel saving. You can keep rolling longer on the same amount of fuel. It means being able to keep pushing when the enemy's off balance; being able to get fuel by air more easily for deep-penetrating units.

This diesel economy is worth pondering, especially by officers used to thinking in terms of gasoline logistics and the tactical operational endurance they impose. Compare the original 32-ton T-34 with the M4A3 32-ton Sherman. Both have engines rated at 500 h.p. But the Sherman with a fine Ford gasoline engine uses two gallons per mile going cross-country, against the T-34's ¾ of *one* gallon. Moral: don't judge a Red armored outfit's range and endurance by U. S. standards. Fatal errors can result.

U. S. officers also have to watch out for the tactical—even strategic—potentials resulting from the T-34's combination of fuel economy with the ease with which it can negotiate cross-country marches. Soviet commanders haven't hesitated to load the tanks with supplies and support troops and dispense with road-bound vehicles. Movements like the trans-Khingan Mountains march result; and as Marshal Malinovsky then showed, covering 700 miles in five days in such terrain is no great problem.

What can happen when people falsely assume that enemy action will be road-centered is sadly illustrated by what Rommel did to Weygand in France in 1940. The French general built his "Weygand Line" on the idea that Panzer forces would follow road axes, hence could be blocked by making antitank nests of stone villages dominating cross-roads. He didn't know that in the just finished Battle of Flanders, Rommel and the other German Panzer division chiefs made their marches *between* the roads. Hence, the Weygand Line garrison was still waiting for Rommel's 7th Panzers to appear, long after it had gotten into their rear. So mysterious—to orthodox French tacticians—were the 7th Panzer's movements in this Battle of France, that Rommel's outfit was dubbed the "Ghost Division."

The fuel, which makes remarkable T-34 marches possible, is carried at the rear in the armored sponsons over the tracks. Drums for extra cruising fuel are carried on the sides towards the rear, sometimes two of the drums being atop the rear plate itself. Often, in combat, Red tankers haven't bothered to remove this highly vulnerable, extra fuel supply.

One reason for fuel economy is that the V-2K engine (which often smokes badly, especially on starts) powers a mechanical-type transmission. No hydraulic torque converters have so far appeared on widely-known Red tanks. It's not the best sort of mechanical transmission, for the Soviet tankers have openly praised one U. S. type made during World War II. However, it's located in the rear, both to provide invulnerability, and to enable the front of the hull to be well pointed so as to deflect projectiles. This feature the Shermans don't have, but it's been followed in the Pattons.

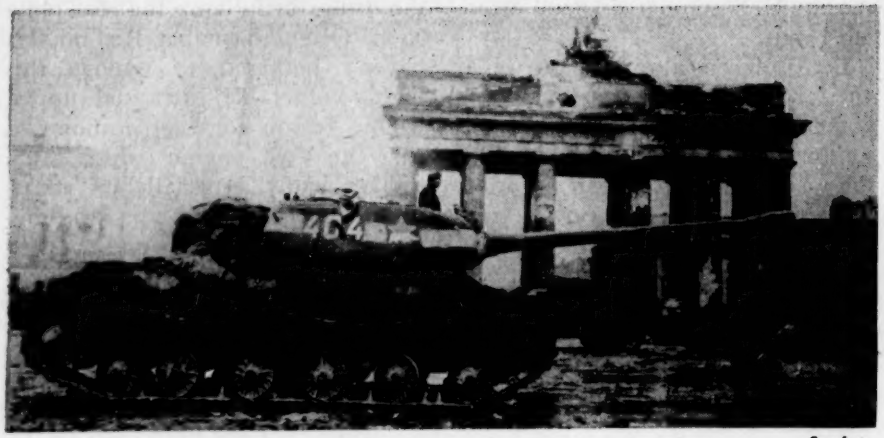
The big-wheel suspension is Walter Christie's. (The Soviets denied him royalties, let him die almost in poverty in Alexandria, Va.) It's adapted from the Reds earlier 1931 Christie BT fast tank. Americans and Germans have said the T-34 can make 32-33 m.p.h. The Soviets rate her at a little over 29. She's hard to steer on surfaced roads, on which the Russians say she cruises at about 16 m.p.h., but she has a nice rolling cross-country gait.

The hull armor is all nicely sloped for "ballistic shape"—by which the "34" made history. It's all very rough welded plate. The turret is a big armor casting, giving it a rounded shape. (The Russians pioneered such big castings, were producing them in '39 when we still thought them impractical.)

Like most Soviet tanks, the "34" has 7.62mm (cal .30) "Degtyarev, Tank" (DT) machine gun versions of the infantry rifle squad's BAR-type "DP" light machine gun. There's a DT in the bow of the hull, on the tank's right. One is mounted with the 85. It fires out a little hole in the armor on the front of the gun mount. (The hole on the left side is for the direct lay scope.)

There's no AA machine gun, but there are plenty of 70-round drums for the DTs. Like all Red tanks, the T-34 carries a PPS tommy gun—the one with the folding metal stock. There are pistol ports to use it from on both sides of the turret, forward. These ports normally are kept plugged.

The 85mm cannon is adapted



Sovfoto

JS II — the iron fist that smashed to victory

from the Reds M1939 flak gun. Unlike the flak original, it has no muzzle brake. It has no bore evacuator, so the turret gets all fumed up when firing. That's why there are domed ventilators on the turret roof, though these are good ways for napalm or Molotov cocktail fluids to enter.

However, the gun—a M1934 or M1944 – can slam out tungsten-carbide-core, armor-piercing shot at almost 3,000 foot-seconds muzzle velocity—better than an M1 rifle ball, and a terrific velocity for cannon.

There are plenty of people who think "34s" with this 85 can outgun Shermans of the 76mm "Easy Eight" variety. They hold that the tactical skill of U. S. tankers in Korea shouldn't obscure the fact the Reds have always been more conscious of gun-power than we. Of course, new Pattons can make it rough for a T-34. Indeed, if such 1950-52 tanks as the Pattons couldn't take on a 1943 revise of a 16-year old Red tank, then our tank people ought to commit harikari.

The 85 is laid with a straight scope. This scope has a rather limited field of view and poor characteristics which cause objects to dim in poor light. Turret traverse is manual or electric; firing, the same.

The fittings for artillery-type indirect fires (as controlled by forward observers) are very inadequate. The Soviets, like the Germans, think this sort of work isn't what a tank with high-velocity gun is made for.

True, in the early T-34s and in the previous Red tank "family," there had been nice, complex periscopes with graduations and scales sufficient to help Einstein work out his theories. But for World War II mass production, very simple periscopes were substituted on this and other items of Russian armor.

The gunner (on the tank's left) and the loader (on the right) each have one of these periscopes in the turret roof over their heads; the devices can be turned to each side. But they cover only 180 degrees, not a full circle. Only the tank commander's periscopes can cover the rear as well as front and sides. To make this possible, his scope is mounted in the hatch cover of his cupola (turret, left rear) and the whole hatch cover rotates. This turret cupola also has five fixed episcopes fitted around its circumference, near its base. Nevertheless, vision from inside the tanks is pretty poor – which is good when bazookamen hunt down isolated "34s."

Besides the three men in the turret, the crew consists of the driver (to the tank's left), and bow gunner/assistant driver (right). The driver has two periscopes set in his hatch, but (except for a DT aiming peephole) his assistant can't see a thing. Since the radio was put in the turret when the 85mm guns was added (and a third man in the turret, to bring the crew to five), the assistant driver hasn't much to do in action.

The sturdy, simple radio should be a big boon to Red tank operations. The lack of radios and intercom phones (now universally fitted) was a tremendous World War II handicap. When Stalingrad was fought, often only unit commanders had radios. Subordinate tanks were controlled by flags. The fitting of these telecommunication items makes it especially dangerous to judge present Soviet Army tank forces by the Reds' World War II performance.

The ammo supply is pretty good. Most of it is unhandily stored in large metal boxes which form the deck under the turret. Ready racks in the turret's rear overhang carry 12 rounds or so in crude racks and there are a few racks on the turret's right side (the left side has the radio).

The T-34 is what you'd call an "armored force tank." One which relies primarily upon mobility for protection, and which is turreted so as to deliver all-round fire from its primary armament. The Soviets always rated it a "medium," and it's what we now call a "medium-gun tank."

People used to deluxe American equipment are likely to snort in scorn at a T-34. It's a rough job. The tank commander's seat is a round piece of plywood with black leatherette covering tacked over straw cushioning. It and the ammo ready racks could have been made in a grammar-school manual arts class and probably were. But the things that count (like the gun scope and gun rifling and the engine's working parts) are of fine workmanship.

This isn't a sign of backwardness. It's a Russian effort to arrange things so that arms can be made fast and cheap—so they can be *available when needed* and *strictly expendable.*

For, as you'll see, the Soviet tactics call for this class of tank to be used like old-time cavalry charges. It's revealing that the Russian maintenance service is still called a "remount" outfit, as if its job were supplying new steeds to dragoons who'd foundered their mounts in fast action—or had their horses shot out from under them.

Not that the crews don't suffer, too. One of the Russians who recently came over to our side, was told on entering the Soviet Army that he shouldn't be sorry to be an infantryman. "You've known plenty of combat infantry who survived the whole war," a veteran told him, "but have you ever known a Soviet tanker who did?"

HEAVIES

The Joseph Stalin (JS) tanks rate as heavy by Soviet weight standards.

Though they weigh little more than a 90mm Patton 48 "medium," their 122mm cannon makes them "heavy-gun" tanks for us.

They're old timers, too. They're merely extremely smart and radical re-designs of the KV heavy tank. Kotin designed the KV in 1937-39, got into production in 1939, into action against the Finns' Mannerheim Line early in 1940.

The KV "heavy" then had only a T-34's 76. (A 57-ton version abandoned in 1941, had a 152mm short tank gun.) Nevertheless, the KV was remarkable for its nearly 3-inch thick plate armor, which no German tank or antitank gun could then penetrate. (And which our contemporary 37mm AT gun could hardly chip.) The KV was a nasty and terrible surprise to the Germans. A compact package of mobility, fire power and protection, with the T-34 it ushered in a new era of tank design.

Kotin, and his principal aide Dukhov, put an 85 in the KV in time for it to see action in '42. But meanwhile the Germans were rushing into action the 60-ton Tiger as a reply to the KV. They were also developing the 50-ton Panther to be their armored force medium tank.

So in December '43, Kotin's Korov plant (moved to the safety of the Urals) started on the Stalin I. Within the same weight as the KV, Kotin got in a great long 122, far thicker armor and much better shell-shedding design.

Even while these JS Is were going into action—in May of '44, Kotin was working out yet a smarter, lower, better shell-shedding design. This JS III ("Pike" the Russians call it, from its sharp fish-like nose) has a flat, turtle-like turret and a truly remarkable squat look, much like our latest 1952 Patton 48. The Stalin III went into action against the Germans in Poland in '45.

In these heavies, the driver is in the center front of the hull, so that the front armor can be streamlined around him. In the Stalin I, he can raise a port to his front, for open vision. He can get side vision by two periscopes mounted in the hull top just over his head, under the gun. In the very first Stalin action, German General Manteuffel's Tigers found the port a weak point, so in the IIs there's periscope vision only. In the III, Kotin finally borrowed the U. S. scheme of not piercing the front plate at all, but fitting an up-and-down driver's seat. This enables the driver to drive with his head out of the hatch in the hull, or in combat use a hatch-mounted periscope.

In the JS I and II the commander also has a DT machine gun ball mounted in the turret's rear. This is because the big 122 cannon usually is carried trained to the rear (even secured by a bracket) on the march. With the 122's coaxial DT thus no good for forward "marching fire," another in the turret rear can substitute. (There's no bow DT in the hull.)

The commander also has a DShK 12.7mm (.50 caliber) machine gun mounted outside and forward of the cupola, for AA and antipersonnel.

On the JS III, Kotin has tried cutting the Stalin silhouette way down. The cupola is done away with. The DShK, mounted on the base of the right-hand hatch, can be swung to cover the road ahead when the 122 is locked for travelling in the bracket on the stern plate of the hull. With ammo carried in the sloping sides of the turtle-back turret, there's no chance for pistol ports. One PPS tommy gun is carried nevertheless, and like all tankers, each crew member carries a pistol.

The 122 is a brute of a gun with a typical, German-style muzzle brake to reduce recoil. It's adapted from a field artillery gun, which in towed form has a range of over 22,000 yards and is assigned to corps units. The tank version has to have its 55 lb HE shells and cartridge cases separately loaded, by hand—not power ramming. It's pretty well agreed that, therefore, three rounds a minute is the best a crew can average. This means that the Stalins have to be very foxy about maneuvers and surprises, so they can make the first round count in tank vs tank duels.

The Stalin's 122 has a fairly high velocity, but its real advantage lies in the size of its projectiles. The armor-piercing rounds have such mass weight that they can bludgeon armor in. As for HE, the big burst is easier to spot at long ranges than smaller shell. It can raise cain with weapons emplacements, withdrawing troops and enemy artillery. Its anti-concrete shell is fine against forts, too.

So the Stalins are good support tanks, able to blow the daylights out of heavy positions, and to shock personnel with the mere size of their shell's bang. But for real tank vs tank combat, most Russians seem to like the newer 100mm gun better—the one in the SU-100 turretless tank.

When you try to get a Stalin's gun and all that armor within a 50-ton limit, you can be smart as a whip, but still something has to go. With the JS's, it's ammo. Only 28 rounds have been carried, we are told. All in all, a Stalin is strictly for sardines: the inside space is far less than in a Centurion or Patton.

The engine is the same as the T-34's, only the Kharkov Diesel Plant installed bigger fuel pumps and injectors to give 600 hp at 2,000 rpm. (The T-34 gives 500 at 1,800; a passenger auto like a Ford V8 runs around 3,000 rpm.)

Actually it's this horsepower limitation which cramped Kotin's design work. His upper weight limit was 66 U. S. tons (60 metric), which is what Russian railway bridges nor-

Sovfoto

Diesel economy — strategic mobility

mally will take. But if he was to keep his heavy tank fast and light of foot, he had to watch his horsepower/weight ratio.

He sure did. Though the KV-Stalin series can only make a maximum of around 21 mph, they cruise on roads at about the same speed as the T-34: 15 mph. That's vital for efficiency, if Stalins and T-34s are to work together. They also have amazing ability to get around handily and operate under the worst conditions of mud and snow. They're poor in sand and in hot climates, though.

People who once thought mere weight would spoil a tank's mobility were proved mighty wrong by Kotin. Those who said in '42 that U. S. Ordnance shouldn't shift from the 32-ton Sherman to a 90mm gun 47 to 50-ton job, have since had to follow in the tracks of the KVs and Stalins. A gift 50-ton KV showed conclusively to America that a well-designed 50 tonner could negotiate far worse terrain than any U. S. tank then existing — no matter how light.

Kotin's tanks' broad tracks are the big secret of his tanks' mobility. The KV-Stalin series may weigh 50 tons to a contemporary Sherman's 32, but on each inch of ground their tracks put only about ten pounds weight. Match that to the original Sherman's 13.6 lbs. That means the heavy armor can go where the T-34s can. Of course, late in the war we followed the Russian's lead with a 23-inch track (the KV had a 28-incher), but we acted too late to fit them to more than a few Shermans.

These wide tracks are hard to damage, too—as is their "torsion bar" type of springing for the road wheels. This the Russians got from German Dr. Ferdinand Porsche's Auto Union racing cars. But until the gift KV and a German Mark III arrived in America, our Ordnance was trying its own spring designs. Today all our tanks, copying Kotin, use torsion bars.

Despite their weight and firepower, the KV-Stalin series has been amazingly low-lying. The Germans and Russians both say this is a big help tactically, especially in gun-duels. It makes a tank easy to hide, hard to detect and when in the open, harder to hit. In our new "tank family" we've finally followed the Russian suit.

For his tanks' squatness, Kotin owes much to Whistler's father and the pre-Civil War U. S. South. You've heard of Whistler's mother: the white-capped old lady in the painting, with the black dress. Well, artist Whistler's pa was a U. S. Southern States railway builder. When the Czar asked him to build the Moscow - St. Petersburg main line, Whistler used the U. S. South's broad gauge — over 2½ feet wider than standard Northern U. S. and European gauge. This means that Kotin and his fellow designers could squash down their tanks sideways to get them flat—as Western designers couldn't, if they ever hoped to get them through railway tunnels and onto standard flat cars. (After the Civil War, the South's rails were re-laid to the Yankees' standard; Russia never got together with Europe the same way.)

While the Stalins are marvels of design ingenuity (the Chinese have paraded only the IIs, by the way), we should remember this: they're basically ancient. They are wartime efforts to modify available guns and tanks to try and make them suit changing combat requirements. You can guess that, were Kotin and Morosov let loose to design totally new tanks with new guns and power plants, they and their combat "customers" might well come up with something different, maybe very different.

It is this author's contention that we'd best watch out because it now looks as if the T-34 and Stalin-KV tank series are built to a design theory for cross-country vehicles which only now is being recognized in America.

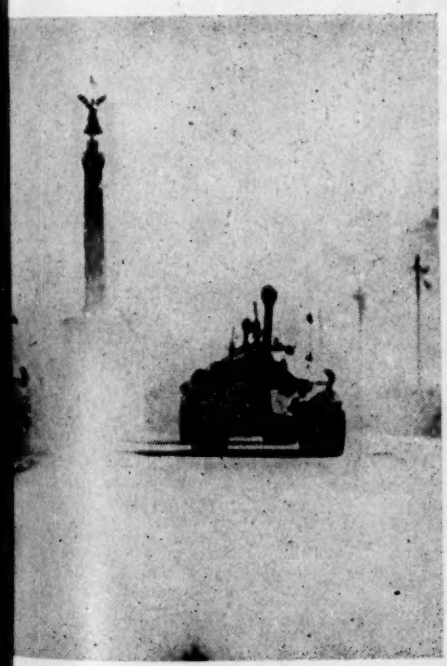
In *Ordnance* magazine for March-April, 1954 there appeared a vital article by a Canadian officer whose Polish homeland has been lost to the Reds. This LtCol Bekker has been working for the Operational Research Office of the U. S. Army on how to approach off-road mobility problems scientifically. He's come up with the novel but common-sense idea that flotation on soils is like flotation in air or water, and that actually, what's needed in cross-country vehicle design is the same approach "which an aeronautical engineer or a naval architect has long since performed with reference to air and sea locomotion."

One of the most important points in this new approach appears to be the matter of weight distribution when the vehicle is in motion, and hence pitching like a ship as it moves over the "rough sea" of rough

JS III — We're still looking for the answer

ground. The normal tracked vehicle may be built with its weight evenly distributed so as to give it low ground pressure per square inch of its tracks. However, when it starts cruising and (say) pitches forward, it relaxes pressure on the rear part of its tracks, and builds up abnormal pressure on the forward part of the tracks. When this pressure gets to be greater than the "critical" pressure of the soil, the track no longer provides flotation but digs in. Hence, power and thus fuel is wasted on doing a steamroller job, which ought to go for forward locomotion only. Therefore, an abnormal stress is placed on the track as it goes under the forward (or load-bearing) roadwheels; excessive wear results and causes short track life and troublesome maintenance problems still too characteristic of tracked vehicles.

It now appears that for proper load distribution, length of track is more important than width. Moreover, the overall proportions of the vehicle as well as tracks must be worked out with due regard to weight distribution when cruising overland.



It is grimly ironic that Americans should at once have spotted certain features of the T-34 which result from the new design theory. But to our shame, we held against the T-34 these minor defects which, in fact, make possible its remarkable flotation in loose soil and mud and snow, its remarkable fuel economy and its freedom from maintenance problems! For it was noted that the T-34 was proportionately rather long for its weight and width, and that this made it harder to steer on roads than stubby tanks because of the inherent defects of mechanical-type transmissions. Yet, if Morosov had built the T-34 stubby, he wouldn't have got a real "land cruiser!"

As top defense scientist Dr. Vannevar Bush has pointed out to this author, the Russians appear to have come upon the need for a proper design approach because they started from scratch in 1927 on the automotive industry. Thus they started with no preconceived notions.

In contrast, the West has been content to accept unquestioningly the Roman mode of vehicular lomocotion. That's to master terrain by laying down a good road foundation and topping it off with a hard surface — a gigantic super-de-luxe track, in effect. In Western automotive progress, there's been no real effort to conquer the land spaces except by using roads, on which anything on wheels will run, no matter how bad the static or in-motion load distribution inherent in the vehicle. Only twice (in World War II and Korea) has any real effort been made to hit the cross-country problem, and then it was on a crash basis with emphasis on production. Even with tracked vehicles, the tendency has been to think in terms of roads and to use them whenever they exist.

But for the Russians roads just didn't exist. When in the 1930s they tried using their copies of Vickers and Christie designs, they couldn't do what Westerners did, i.e., fall back on roads for mechanized marching. They had to compete in cross-country marching with the hayburners and shank's mare propulsion used by the old-type forces, and when they did that, the future of the tank and mechanized troops didn't look promising.

It occurred to the unfettered minds of the new Soviet tank industry's engineers that the Westerners not only were off the beam, but had perhaps never been on. So the Russians went back to first principles. The T-34 and Stalin-KV series are plainly the result of using extant engineered components on a "crash" basis to get a solution. And from the way things look, it may be that the T-34 is just about as good as you can do with engines, steel, transmissions and guns as they are today. It's like the Mauser (Springfield 1903)-type rifle, which really reached its peak of development in 1891 and has had only frills added since.

The nature of the Russians' lead is indicated by the fact that even before Colonel Bekker published in 1954, the Russians got out two great volumes on the Bekker science of off-road mobility. One tome came out in Moscow in 1949 and another in 1952, but Bekker has yet to publish his full work. These books, moreover, are unclassified; like the T-34, they've long been available.

Thanks to the U. S. Marines' mastery of amphibious warfare, the U. S. has at least some samples of the correct design approach. Mr. James Hait, the gifted engineer who runs the Ordnance Division of the Food Machinery and Chemical Corp., got the naval architect's approach to tracked vehicle design when he worked up the famous WW II LVTs, which had to be surf-riders.

Experience with such vehicles led Mr. Hait to note what could be done in bettering "over-soil" flotation of land vehicles. As a result, he's created the Army's startling new 20-ton M59 Armored Personnel Carrier (Marine version is the LVTPX2), the first production models of which have put up a fine record for economy and mobility during the 1st Armored Division's Spearhead exercise in Texas last spring. Most fascinating, is the way the M59s demonstrate that a turretless and lightly armored vehicle automatically can float on inland waters, if it's designed with correct weight distribution to "float" on soft soils when cruising cross-country.

But these M59s appeared only in 1952 as against 1939-40 for the T-34 and KV series. The Russians thus have a long, long lead in both theory and practice, and we had best watch out. Their next step forward in mechanized warfare vehicles may be a big one. USMC

(Mr. Underhill will continue his discussion of Soviet armored vehicles and developments in future issues.)

MONGOL HORDE

The armies of Ghengis Khan were not a motley, unkempt mob. The "horde" was a well-organized, thoroughly disciplined organization . . . a forerunner of today's military units

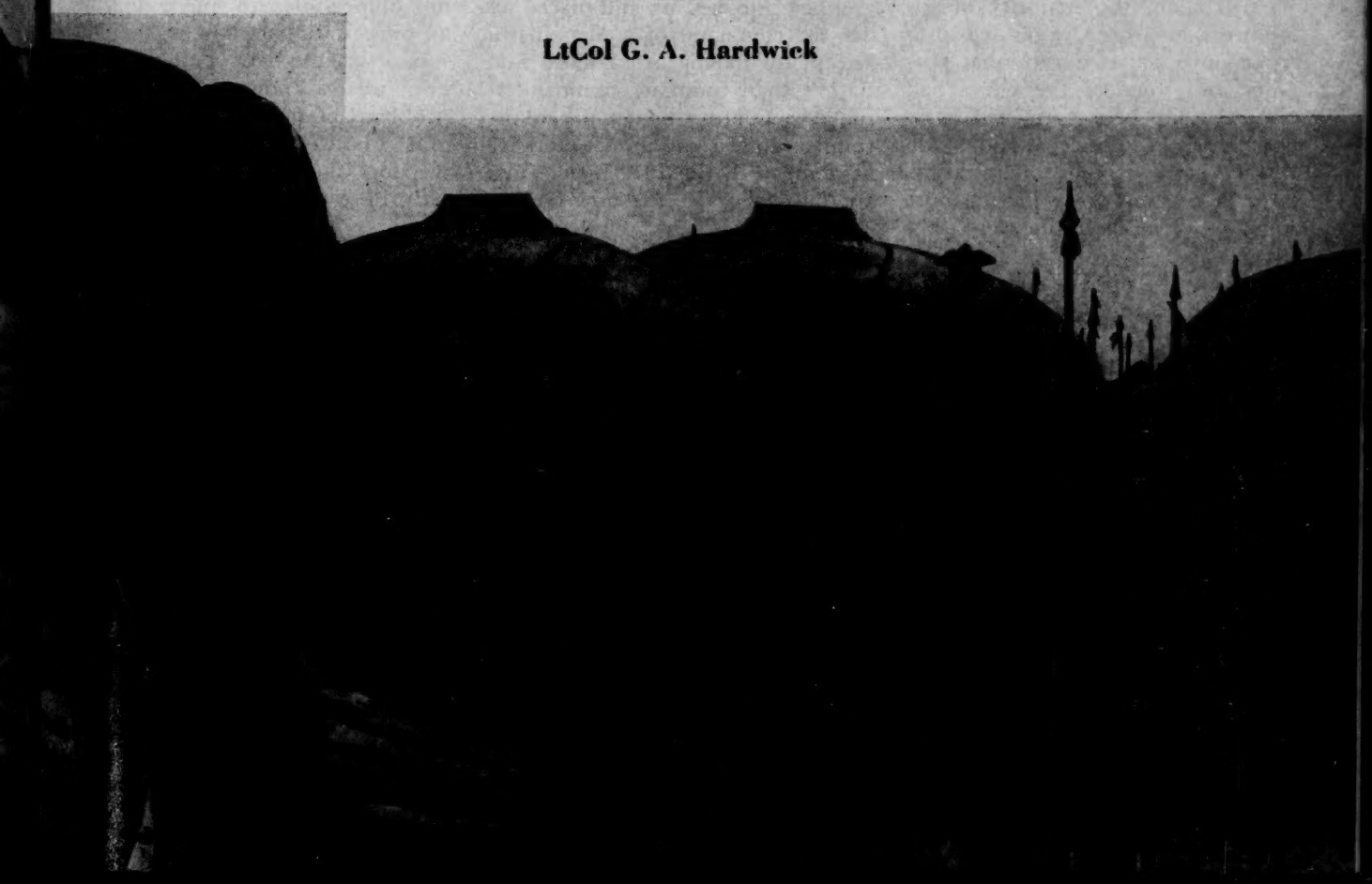
LtCol G. A. Hardwick

EVENTS IN KOREA AND THE FAR East have, in numerous instances, brought to the fore the name of a by-gone conqueror, a master of warfare in barren, inhospitable, arctic-cold lands—Ghenghis Khan.

To many comes a mental picture of his forces — a motley, unkempt horde, redolent of rancid yak-butter, vanquishing opposition through sheer overwhelming weight of numbers. Yet, if this were true, one cannot help but wonder how such a loosely organized horde could conquer and militarily defeat capable, recognized armies which in instances outnumbered the horde by 20 to one.

Upon closer examination the answer is simple. The "Horde" as such simply did not exist — in the commonly accepted meaning of the word. For the Mongols, a horde was an administrative subdivision of their empire. The conquering Mongols were a thoroughly organized and well-equipped military force, with subdivisions bearing a striking resemblance to present-day military units.

The array for combat, prevalent among the peoples of the Gobi desert at the time of the ascendancy of the Yakka Mongols, was that of a loose tribal organization with subdivisions of clans or families. Each subdivision was loosely bound in combat under the titular head of the clan and operated to a large extent on its own. In victory, each unit stopped its assault when the individual chieftain considered his ends accomplished and commenced reaping the spoils—pillaging, killing and ravishing or capturing young women for brides or slaves. In defeat, individuals or groups left the field of battle and escaped as best they could, to hide until the victors departed from the area; to reassemble at a later date, or to join another tribe with a more promising future. To a



large extent, the probability of victory or defeat was in direct proportion to the numerical strength of the tribe concerned.

Early in his career, the young Temujin (later to be known as Genghis Khan) realized that although his followers were young, fearless and the best horse archers on the desert, they were too few compared to the neighboring tribes. They could not, utilizing conventional techniques, even protect their own yurts, herds and grazing lands; let alone fulfill his dream and ambition to rule the Gobi. Following his defeat at Gupta (circa 1206) by the Keraits under Toghrul Khan, Temujin retreated with the remnants of his force to the inhospitable hills and gorges of the northern reaches of his lands near Lake Baikal. In bitter cold winter surroundings, among the snow covered sand dunes and tamarisk, he began creating a professional army out of his mob-like, heterogeneous tribes. Here was developed the well-organized, disciplined, highly-trained fighting force (heretofore unknown in the Gobi) that was to prove invincible under his leadership.

Until then, the majority of his followers had been organized into crude units of ten for combat purposes; but some of the tribes had preferred and been permitted to retain their old, loosely bound, traditional family type organization. Superior organization, superior training and perfect discipline were to be his means of overcoming numerical superiority of opponents. A prototype of the modern military organization was established during this winter encampment . The basic unit had to be small enough so that control could be exercised by the leader even in the confusion of plunging horses during the heat of combat, yet large enough to furnish mutual protection to its members against more numerous foes. A fortuitous coincidence was that nine was considered a sacred (and lucky) number among the Mongols. Was that not the number of sacred white Yak tails in their standard? So nine warriors were to be the smallest military unit, called an Ung, headed by an Ung-Khan. The present day counterpart is the squad. Its leader (Ung Khan) was responsible for the individual training of his men, their readiness for combat (including equipment) and was bound in life and death to them. Within the Ung, it was forbidden to leave a dead or wounded member on the field of battle; not to go to the aid of a comrade; to retreat before being ordered. When away from their home yurts, the nine Mongols and their Ung-Kahn literally lived together, fought together and died together.

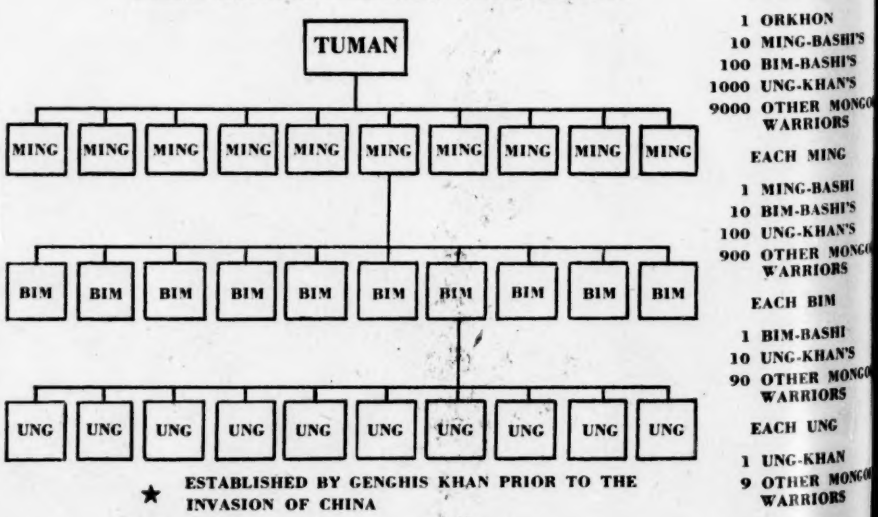
Reminiscent of ever recurring proposals to streamline present military units and eliminate certain command levels, the Mongols had no platoon level. Instead, ten Ungs were joined together to form a Bim, under the command of a Bim-Bashi. The responsibilities and duties of a Bim-Bashi were very similar to those of a company commander; while the 101 man Bim finds its present day counterpart in the larger, current company.

Following the consolidation and uniting of smaller military units into larger ones, so familiar to us of the present day, ten Bims were grouped into a Ming and placed under the command of a Ming-Bashi. Except for having a few more Bim-Bashi's than company commanders, the 20th Century lieutenant colonel commanding a battalion would feel at home with the 1010 men Mings. In the next stage, the now familiar regimental level was omitted and the ten Mings were directly united into a Tuman or division under the command of an Orkhon or general.

This, then, was the Mongol combat division, 10,111 officers and men. As can be seen from the accompanying chart, the command channel was clear cut and responsibility clearly defined within the Tuman. A Mongol aphorism gives one an insight into their philosophy of battle. "If warriors are forced to fall back, they shall advance with renewed vigor. Who, having retreated, does not advance again will be beheaded." As a basic tenet, Temujin decreed that if any unit, from Ung to Tuman, retreated before the order to withdraw was given, the nearest Mongols were to stop fighting the enemy and attack and kill the retreaters on the spot.

But, of course, what about force troops, combat service units and the like that we must now have to support our basic infantry or armored forces? Well, unfortunately, there apparently did not exist Mongol counterparts to historical units so the records are fragmentary at the best. Accordingly, it is difficult, if not impossible, to piece together an organizational chart of the units supporting the basic Tumans. However, we do know that the logistic problems of moving a force of several hundred thousand mounted warriors thousands of miles could only have been solved through or-

BASIC MONGOL MILITARY ORGANIZATION

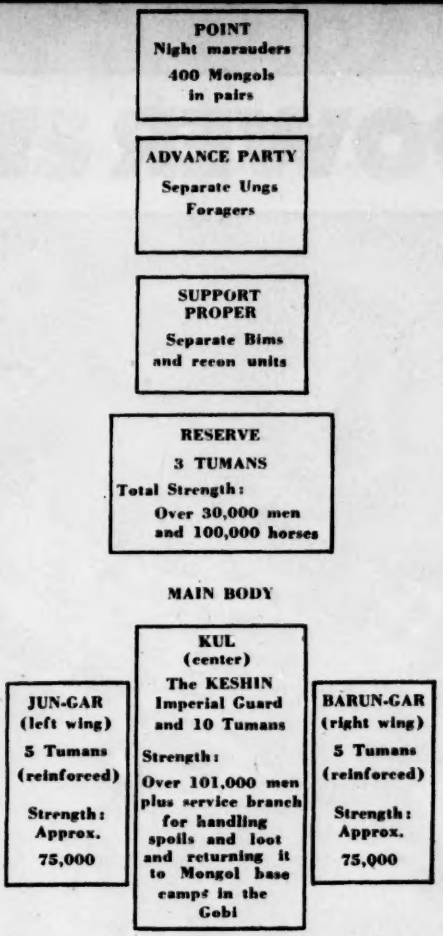


★ ESTABLISHED BY GENGHIS KHAN PRIOR TO THE INVASION OF CHINA

ganizing the logistic support elements as thoroughly and completely as the basic combat forces. An indication as to the magnitude of the task may be gleaned from Genghis Khan's first invasion of China in the year 1211. His invading force consisted of almost 300,000 warriors and half a million horses. Further, we know that in later campaigns, units employing mangonels and catapults were used to reduce fortified cities and towns. They too, undoubtedly, were organized into counterparts of contemporary artillery batteries, battalions and groups.

How an invading Mongol "Horde" might have been organized can be seen by examining, in so far as practical, the forces of Genghis Khan upon his invasion of China in 1211. A schematic diagram of that force is set forth below. Though available information as to precise and detailed functioning of the major units of that force is meager to the extreme, we can piece together a general picture of their employment. Preparations for the operation were minute, thorough and time consuming; and accomplished in and from the Mongols' home domain in the Gobi. For the better part of two years, arrows and other individual equipment for battle were made; horses were gathered; food and forage cached along the route of advance; intelligence agents sent out; and patrols conducted reconnaissance in force.

The over-all commander was, of course, Genghis Khan. He also personally commanded the main body or Kul. Although performing some missions for the entire invading force, the reconnaissance units and foragers have been shown as a portion of the advance guard since they came under the over all command of that task force. They consisted of three general types. The night marauders — or night hecklers — ranged far and wide, ahead and to each side, of the advance guard. This group consisted of approximately four hundred Mongols operating in pairs and living off the countryside. Remaining quiescent and under cover during the day, they aroused villages at night by clattering through shouting alarms of attack and fired isolated homes and communities. In so far as scouting and reconnaissance missions are considered, this group



might well be compared to the conventional point. Following the swatch of these raiders came separate Ungs, the real foragers and suppliers of the invaders. As did all members of the advance guard, they too had extra horses. But in addition, these Ungs had herd boys and carts to collect food and herds into supply points along the main routes of advance of the army. Further, they assisted in clearing areas of enemy scouts, kidnaped officials for questioning at headquarters, selected and marked likely bivouac areas, reported on enemy activity and spread terror by fire and sword where possible. Regarded in entirety, these Ungs were comparable in many ways to the conventional advance party.

Operating closely in conjunction with, or adjacent to, the scout-marauders and foragers were the separate Bims of the screening force or support proper. Their mission was to engage and maintain contact with advance forces of the enemy, break through and disrupt lines of communication and, through widely dispersed diversionary tactics, create confusion and doubt as to the movements and route of advance of the main forces or reserve.

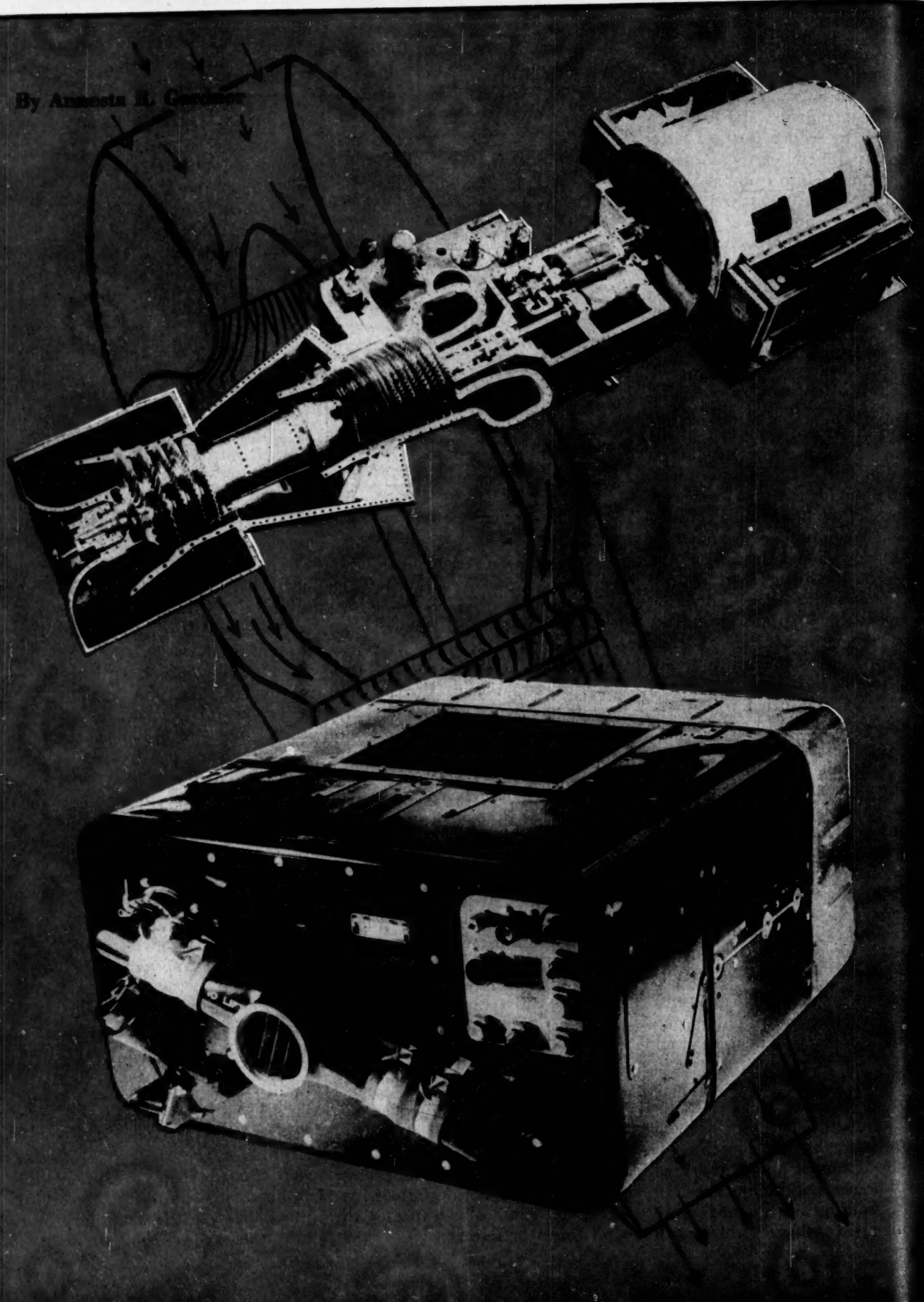
The main portion of the advance guard (reserve) consisted of three Tumans — over 30,000 men and a hundred thousand horses. It was a highly mobile, powerful, normally self-sufficient spearhead, commanded by Genghis Khan's three principal, most competent Orkhons — Chepe Noyon, Subotai Baghatur and Muhuli. The Mongols seemed to have solved the complex problems of command relationship, divided command and joint responsibility. Two or more Orkhons, each independent, each of equal rank, each in effect responsible only to Genghis Khan, would undertake a task requiring several years and apparently there would be no rivalry, no major differences of opinion, no unbending pride. In this instance, Chepe Noyon, because of his tactical brilliance and knowledge of the terrain (acquired through his recent excursion in North China in the service of the Kin) was in command; but Subotai Baghatur was an independent second in command; and Genghis Khan instructed Muhuli, veteran of the early campaigns against the Tartars and the Keraits, to watch and restrain the two youngsters. In the majority of the battles, in this first invasion of China, this hard striking advance guard so thoroughly defeated and routed the opposing forces that there was little active combat for the main body.

The main body was divided into three parts: the Barun-gar or right wing; the Jun-gar, left wing; and the Kul, center, commanded by Genghis Khan himself. Possessing only slightly less sustained mobility than the advance party, each warrior of the main body had at least two horses. The Jun-gar and the Barun-gar were composed of five Tumans each, plus additional contingents as reinforcement. The respective wings each totaled approximately 75,000 warriors. The Kul was composed of the Keshin Imperial Guard (personal bodyguard of Genghis Khan) and ten Tumans for a total of over 101,000 warriors, plus a service branch to handle the spoils of the battles and return them to the Mongol Yurts in the Gobi.

This was the Mongol "Horde," a well trained, highly organized, disciplined expeditionary force — to which many modern military units bear a marked resemblance. USMC

MORE POWER WITH GA

By Augusta R. Gardner



A TURBINES

The simplest type of jet engine will soon play an important role on land and sea as well as in the air

IF ANY GROUND-BASED OR SEA-going Leathernecks have been envying the Air Wings' high-flying jets, they can stop right now. They're getting jets of their own.

The gas turbine, as the jet engine is properly known, is moving into land-based vehicles and sea-going craft, finding all sorts of auxiliary jobs.

For more than a year, Army Ordnance has been testing a gas-turbine-powered 2½-ton truck. Naval Research has had gas-turbine-powered LCVPs and other small craft in the water since 1950. The Navy is now taking delivery of a brand new kind of fire-fighting pump for shipboard use that weighs a mere 165 pounds, complete with fuel and accessories, yet delivers 500 gallons of water a minute—as much as a medium-sized fire truck.

Similar gas turbines are being used as airborne electric generators, and are under test as space heaters (they have many advantages, particularly for Arctic use), to supply power for fuel-transferring operations and as motive power for small boats.

What makes the gas turbine so useful? Why is it important to Marines? Why did the jet engine appear first in planes and only later in such jobs as these? The answers are not hard to find—and they're worth finding.

Basically, the gas turbine is one of the simplest engines. In contrast to Diesel and gasoline engines, which have a great many moving parts, the gas turbine consists, fundamentally, of only three elements: a compressor, which draws air in and compresses it; a combustion chamber, in which the air is mixed with fuel and heated by the burning of that fuel; and a turbine wheel against which the heated gases expand, causing the wheel to turn and making useful power available at the take-off shaft. Some turbines are, of course, considerably more complex than this. But these are the basic elements.

This type of power plant can be made in a wide range of sizes. The gas turbines used to power fire pumps, trucks and LCVPs are in the 50 to 200 horsepower range. Turbines for locomotive traction and pipeline pumping are rated at about 4,500 horsepower or 3,500 to 5,000 kilowatts. And gas turbines used by public utilities for electric power generation run up to 27,000 kilowatts. (The largest turbine now being built in the U. S. is a 20,000 kilowatt unit. The 27,000 kilowatt giant is in Switzerland.)

As this size range indicates, the gas turbine is a remarkably versatile power plant. One Boeing model, for instance, powers both the experimental Army Ordnance truck and the Navy LCVP; and has also been adapted for use as a water pump and an electric power generator. It is being used by the Detroit Arsenal to explore the possibilities of gas turbine propulsion for tanks; and has even been installed in a helicopter.

An AiResearch gas turbine "power package," originally designed to act as an air compressor and provide pneumatic power for operation of aircraft accessories, is now being tested in such jobs as generation of electrical power, heating and refrigeration—both in the air or on the ground. AiResearch says this self-contained unit which weighs only 150 pounds can be pressed into service for smoke screen generation, assault boat inflation, refrigeration of hospital tents, supplying power for portable hoists and a string of other jobs.

In addition to versatility and simplicity—and partly because of these features—the gas turbine has many other advantages. It needs no water and little oil. It can burn a variety of fuels, including natural gas, Diesel oil and kerosene. It can be made smaller and much lighter in weight than comparable gasoline or Diesel engines. In fact, a gas turbine which is only six feet long and three feet high and wide, weighing only 800 pounds, can run a 250-kilowatt electric power generator of the type used for emergency service aboard ships—a job that would normally require Diesel equipment at least four times as big.

Boeing engineers estimate that as much as 3,000 pounds is saved when a gas turbine substitutes for a Diesel engine in a heavy truck. That weight saving comes in part from the light weight of the gas turbine itself (Boeing's 175 - horsepower engine weighs less than 250 pounds), and in part from the fact that the gas turbine engine does not require an elaborate transmission. The turbine itself has many of the characteristics of a torque converter.

The saving in space, when a gas

HOW THE NAVY NAMES ITS GAS TURBINES

The Navy's system for naming its gas turbines packs a lot of information in a few letters and numbers. Here's how it works:

The baby turbine used on the fire-fighting pump, for example, is Navy No. 1MC45S-2.

The first number gives the horsepower (to the nearest hundred), divided by 100. In this case, it's a 45-horsepower unit, and the nearest number is 1. The first letter refers to the expected service life of the unit. This one is "Medium" (501 to 5,000 hours). The second letter describes shaft rotation — constant or variable speed. This one is Constant. The next two numbers give output shaft rotation—again to the nearest hundred and divided by 100. The Solar turbine's output shaft rotates at about 4,500 rpm. Finally, there is the manufacturer's designation ("S" for Solar) and the modification number (2).

As another example, the Boeing turbine used in the LCVP has the Navy number 2MV27B-2. It is 175 horsepower, medium service life, variable speed, rotates at 2,750, is built by Boeing—and it's the second modification.

In contrast, aircraft jet engines are simply given a specification number and a model change number. Navy-sponsored units have even numbers; those built for the Air Force have odd numbers. Thus, the J40WE6 is a Navy turbojet built by Westinghouse (sixth modification); while the J47GE27 is an Army turbojet built by GE. Turboprop engines are distinguished by the initial letter "T." The T-34 P was a Navy turboprop built by Pratt and Whitney.

turbine replaces a standard truck engine, is even more impressive. The gas turbine is almost lost in a standard engine compartment. Yet this little power plant is able to carry the full legal weight limit – 68,000 pounds. As one old-line trucker who drove the Boeing-powered Kenworth truck put it: "That gas turbine is a scrawny-looking critter. But it's all engine."

In helicopters, the gas turbine can save weight too – over 200 pounds. Furthermore, it permits a much simpler and more foolproof rotor-drive arrangement.

In addition to all these advantages, the gas turbine operates almost without vibration. It usually requires no external cooling system. It has no clutch. It does not seem to be seriously affected by dust. And it has good cold-weather starting characteristics.

Obviously, the gas turbine is an engine that you *can* take with you. It sounds like the answer to a Marine's prayer. It can stand the desert or the Arctic. It can be adapted to sea-going or land vehicles. It can be used as a pump, air-compressor or electric power generator.

Where have they been hiding it all these years—and why not just replace existing gasoline and Diesel engines right away?

The answer is, of course, that the gas turbine, like any new machine, presents problems as well as advantages. Chief among these problems are efficiency, fuel and air supply.

The simple gas turbine is not a particularly efficient power plant, and it does burn a distressing amount of fuel—two or three times as much as a comparable reciprocating engine.

True, the gas turbine uses relatively cheap fuel. But the logistic problem alone—just getting the fuel where it's needed – is a tough one. Furthermore, gas turbine fuels are cheap only in comparison with the high-cetane and high-octane fuels required for today's high-powered, reciprocating airplane and passenger car engines.

A great deal of time and effort have gone into finding ways to make the gas turbine use the really inexpensive and abundant fuels: heavy residual oils and coal. At long last, encouraging reports are beginning to come in. But the fact remains that the gas turbine's range of fuels is not as great as it has been cracked up to be.

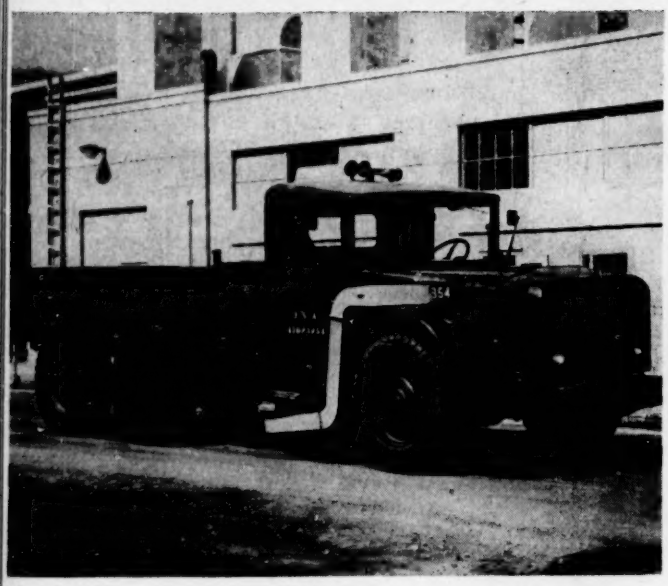
A lot of work is being done, too, on finding ways to increase the gas turbine's efficiency so that it will use less fuel. Several methods have been found, but most of them increase the size, complexity or cost of the unit at the same time.

One approach that shows considerable promise is to modify the design of the turbine itself to achieve a compromise that increases efficiency without adding too much to complexity or costs. The turboprop engine is a compromise of this type.

Two problems which, at first, loomed very large – particularly when use of gas turbines in ground vehicles was being considered—have not turned out to be half as serious as they seemed. These are noise and disposal of exhaust gases.

No one would claim that a gas turbine engine purrs as softly as a kitten. It *is* noisy. But so is a big Diesel truck. When the engine compartment and cab are well insulated, the noise level of a turbine-powered truck is not uncomfortably high. Likewise, disposal of exhaust gases is not too difficult. The truck models have a vertical exhaust stack that does the trick.

In fact, a much more pressing and troublesome problem is getting air *into* the gas turbine engine. There's no denying that this type of power plant is an air-gulper. It takes about five times as much air as a comparable reciprocating engine (air scoops on jet planes aren't there for decoration). But, by careful location of



Noisy . . .

Speedy . . .

the engine, and use of an efficient ducting system, this problem can probably be solved.

Much can be expected, too, by way of step-by-step improvements of existing designs. For instance, an advance model of the Boeing gas turbine used in the LCVP is said to have a rating about 50 horsepower greater than the current model and a minimum fuel consumption 30 per cent lower.

Many of the present limitations of the gas turbine are in areas where the engine itself is basically strong. For example, the simplicity of the basic turbine design and the small number of parts required (sometimes barely one-tenth as many as a reciprocating engine) should make for low initial cost and long life. Right now, many gas turbines are not outstanding in either respect.

A few gas turbines – notably the pipeline pumpers and the stationary electric power generators—can show a saving in initial cost as compared to standard equipment. But this saving is largely in housing, foundations and auxiliary equipment, rather than in the turbine itself. For instance, the gas turbine takes less space than a steam generator, does not require a boiler and does not require as heavy a foundation. But even where the gas turbine does not show a saving in initial cost, it may pay its way in operating economies or special advantages. And costs should certainly come down as production increases and engineering improvements are made.

Service life was a tremendous problem with the first airplane jet engines. It has never been as serious for other types. However, in many applications, there is still something to be desired. Progress in this area is encouragingly rapid, though. Indeed, improvements in materials and turbine design have brought an average increase of over 100 per cent in the service life of jet engines in the past few years, and have made it possible for the Air Force to cut back on replacement orders several times.

Thus, the design and service problems of the gas turbine are being solved. But why has it taken so long? Why weren't sea-going and land-based gas turbines available years ago?

The fact is, it takes time to develop a brand new power plant and it takes time to adapt it to each new use.

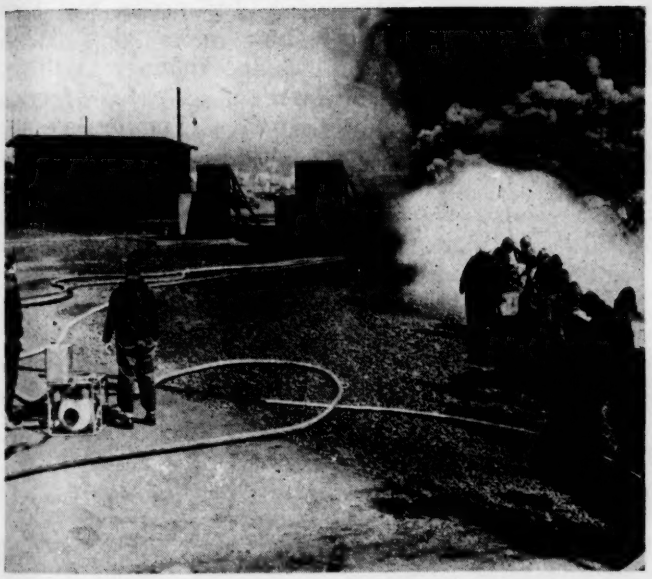
So much for what has happened and what is happening. What can be expected of the gas turbine in the future? Here are just a few indications of things-to-come:

Just about every military service has a variety of gas-turbine-powered units under consideration. BuShips, for instance, is studying application of the gas turbine to everything from personnel boats to cargo carriers. The Navy's Civil Engineers are looking into possibilities of gas-turbine-powered earth-moving equipment. BuAer is sponsoring development of "packaged" gas turbine power units.

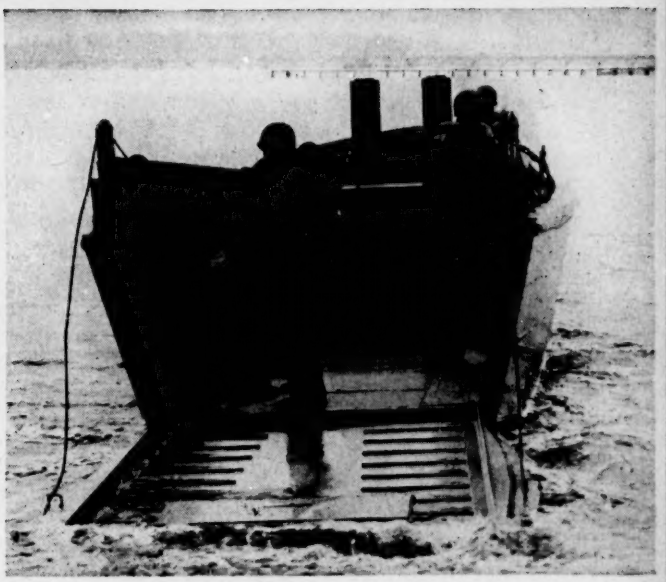
Army Ordnance is trying out gas turbines in many of the vehicles it uses—both wheeled and tracked. And the Air Force is taking to the gas turbine in such a big way that bombers of the future may have more auxiliary gas turbines than rivets.

Other countries are hard at work on the gas turbine as well. The British Navy has a launch and a motor torpedo boat equipped with small gas turbines, and is having two 6,000-horsepower engines built—one for a frigate and one for a gunboat. The British also have a 1,200-horsepower unit on test in an oil tanker and a 3,500-horsepower one in a merchant ship.

It looks very much as though it won't be long now before the gas turbine joins the Marines in a big way – and is ready to go with them on land and sea as well as in the air. USMC



Portable . . .



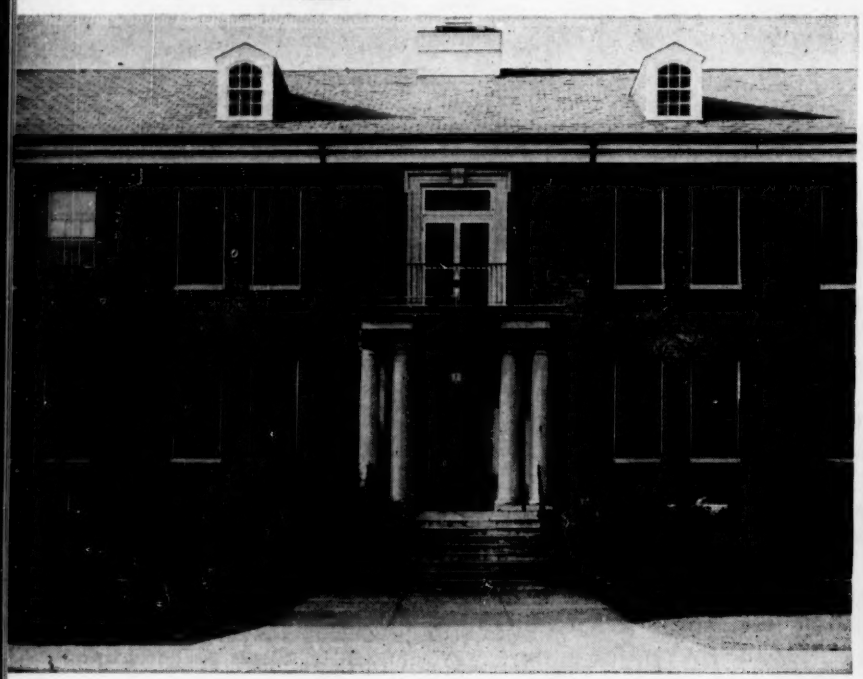
Practical . . .

The Develop

ON THE MORNING OF 1 JULY, 1891 seven second lieutenants met at the Marine Barracks, Washington, D. C. They were the first class to attend the School of Application recently established by order of Charles Heywood, Colonel Commandant of the Marine Corps. For some 116 years the Marine Corps had carried out, with distinction, its many missions without the benefit of formal schools. Now the Congress had passed a law requiring promotion examinations for all Army officers below the rank of brigadier general. The Colonel Commandant had recommended that the provisions of the law be extended to include Marine officers and, in anticipation, had directed the formation of a school to meet these new academic requirements for advancement.

The problem which faced Captain D. Pratt Mannix as Commanding Officer and Director of Instruction was a difficult one. He held the directive of his Commandant and little else. Formal schooling in the service in those days was virtually non-existent. Captain Mannix had nothing to start with except his own experience. Together with 1st Lt Thomas C. Prince, the only other instructor on the staff, he prepared a nine months' course which set the pattern of instruction for several years to follow. Naturally enough, the subjects covered reflected the duties performed by Marine officers of that period. Instruction had been divided into seven departments which included Infantry, Artillery, Administration and Sea Service, Law, Torpedoes, Engineering and Military Art.

The School of Application, so modestly launched, remained open for only seven years. In 1898 officers were needed for field duties and the school closed. It wasn't until after the Spanish American War that the school was able to reopen. This first interruption was not to be the last.



Breckenridge Hall — Senior School

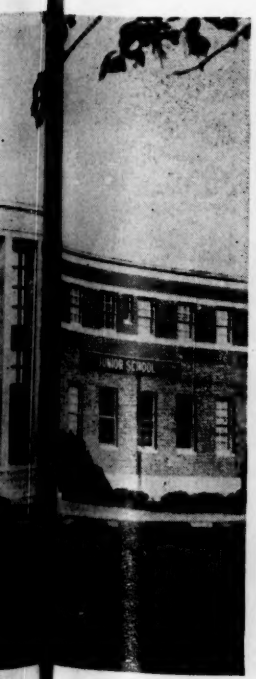
Geiger Hall — Junior School

opment of MCS

In the years to follow, expeditionary duties for Marines were to provide a different type of schooling for the officers of the Corps.

In 1907 school again closed and the Marines were off for Panama, Cuba and the Philippines. In 1912 the Marines went to Nicaragua; and from then to 1919 formal schooling became a very limited activity. There was yet to be one more interruption. In 1928-1929 Marines again went to Nicaragua, and again the requirements from the field forced a shutdown of the school.

To add to the difficulties arising from such fluctuations, the location of the school was changed several



times. In 1903 the school moved to Annapolis, Maryland and in 1908 it moved to Port Royal (Parris Island), South Carolina, where its name was changed to the Marine Officers' School. Two years later, another move saw the school in Norfolk. Finally, in 1919, the Marine Officers' School was established at Quantico where it has remained ever since.

Before the first World War the Marine Corps had been a small organization; Torpedoes, Sea Service and Naval Gunnery were important. In land fighting the problem was how to fight a large, ill-equipped enemy with a small well-equipped Marine force. The war changed much of that. Service in France as part of a large land army broadened the horizons of the Corps. Then too, the War brought home the full impact of mechanization and industry. New weapons, such as tanks and aeroplanes, came to change tactics. Specialization of functions became necessary as the skills required to man the instruments of war multiplied.

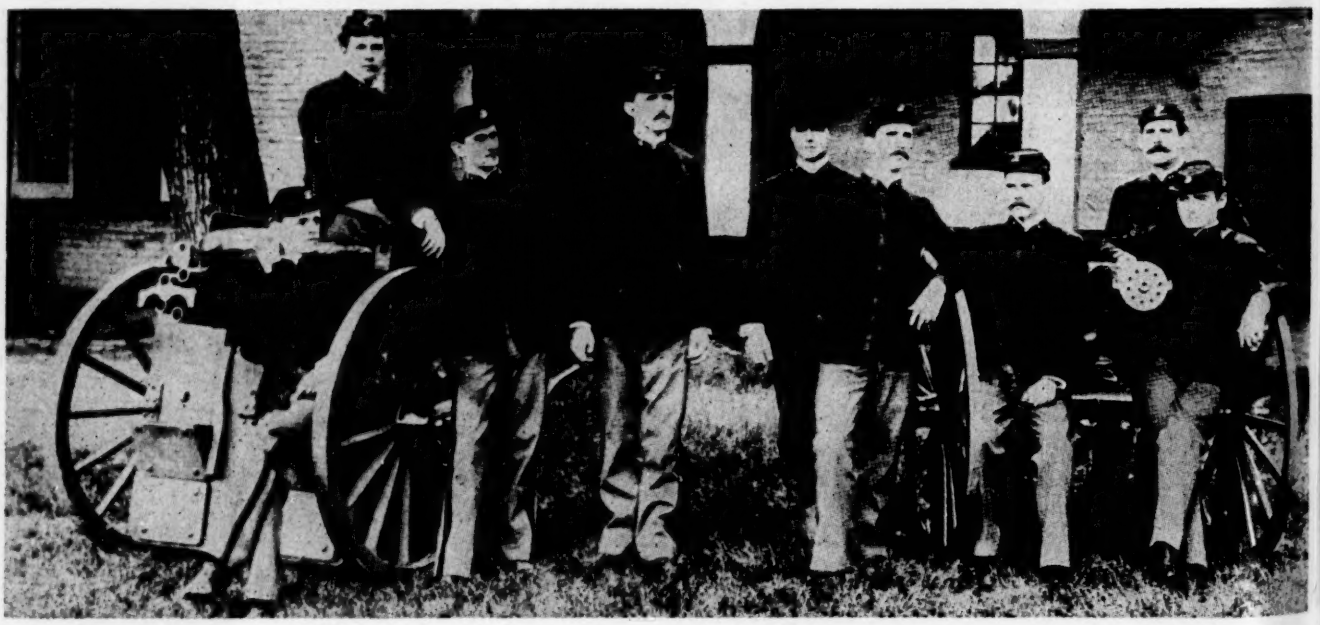
The concept of Marine Corps operations with the Fleet began to take its modern form immediately prior to WW I. In 1921 this concept received new impetus with the organization of the East and West Coast Expeditionary Forces. In a measure, this evolution of the amphibious mission as the primary concern of the Corps can be traced in the development of the school system. The Corps had undergone an intense Army-type experience. When the Marine Officers' Training School opened in March, 1919 it offered a course largely devoted to Army subjects.

The concept of the increased importance of schooling, a natural result of the new complexity of war, eventually matured in 1922. The Marine Officers' School in that year offered three courses; Basic, Company Officers' and Field Officers'. For the first time the Corps had a system of formal education for its officers. One school for junior officers was no longer adequate. Schooling was now to be a progressive function continuing throughout an officer's career. At the same time that the system itself was expanding, there were continuing departures from Army influence. During the '20s, reports of Fleet landing exercises, historical research and the efforts of the Marine Corps Schools began to yield a body of data on amphibious operations. The school curriculum reflected, in increasing measure, the tactics of Marine forces operating with the Fleet.

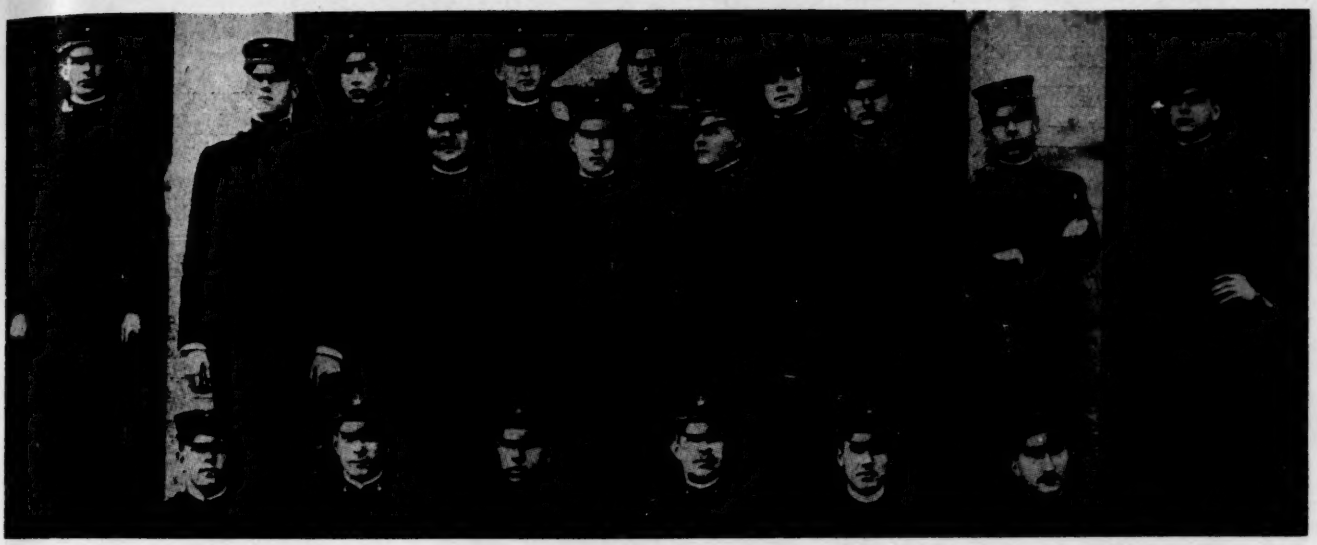
The technique of instruction in the schools during this period was quite rigid. Students were given facts as found in field manuals and were tested on their ability to memorize the data presented. There were no field problems. Independent thinking and individuality on the part of the students was minimized. Many texts were of Army origin.

In 1929 Colonel Breckenridge attacked the rigidity of instructional methods in the schools. He wished to get away from the mechanical approach to military schooling and develop individual thought. The same year, there was published at the Marine Corps Schools, a series of tentative landing force doctrines. In 1930 the first general officer to take command of the school, BrigGen Randolph C. Berkeley, ushered in a new era. Within the next five years there were to be many radical changes. The curriculum of the schools had reflected these trends toward amphibious subjects and different instructional methods in a piecemeal fashion.

Finally, in 1931, the curriculum of schools as a whole was subjected to the critical analysis of a formal board. The result was a revision of the curriculum to emphasize Marine Corps organization, equipment and amphibious operations. LtCol E. B. Miller, newly appointed as Director of the Senior Course (formerly the Field Officers' Course), decided to go even further. He directed that all instruction be rewritten to reflect Marine Corps organization and equipment. Prior to that time the schools, in order to utilize Army publications, had based their instruction largely on Army organization and equipment. In rewriting



The 1894 School of Application included a future Commandant, 1stLt W. C. Neville (3rd from left)



J. H. Russell, 16th Commandant — (3d from left, front) instructor for the 1906 class at Annapolis

instruction, the staff was forced to answer a number of questions. Many of these answers were based upon careful estimates derived from history and integrated with information made available through the experience being gained in practice.

While these academic upheavals were taking place, the Corps was on the threshold of a major event. In 1933 the Fleet Marine Force was established. At last the Corps had obtained the definite expression of its amphibious mission. The school paralleled this vital change by making its primary function that of training officers for duty with the Fleet Marine Force.

Later in that same eventful 1933, the Commandant directed that a manual on amphibious operations be prepared. This publication, originally called the *Tentative Manual for Landing Operations*, was issued in 1934. Almost from its first appearance there was the problem of revision, and the manual underwent periodic improvements. Ultimately in 1938, it was republished as *Fleet Tactical Publication 167*, reflecting thereby its full acceptance by the Navy. This was the manual which guided the fortunes of the United States on the many beaches of World War II.

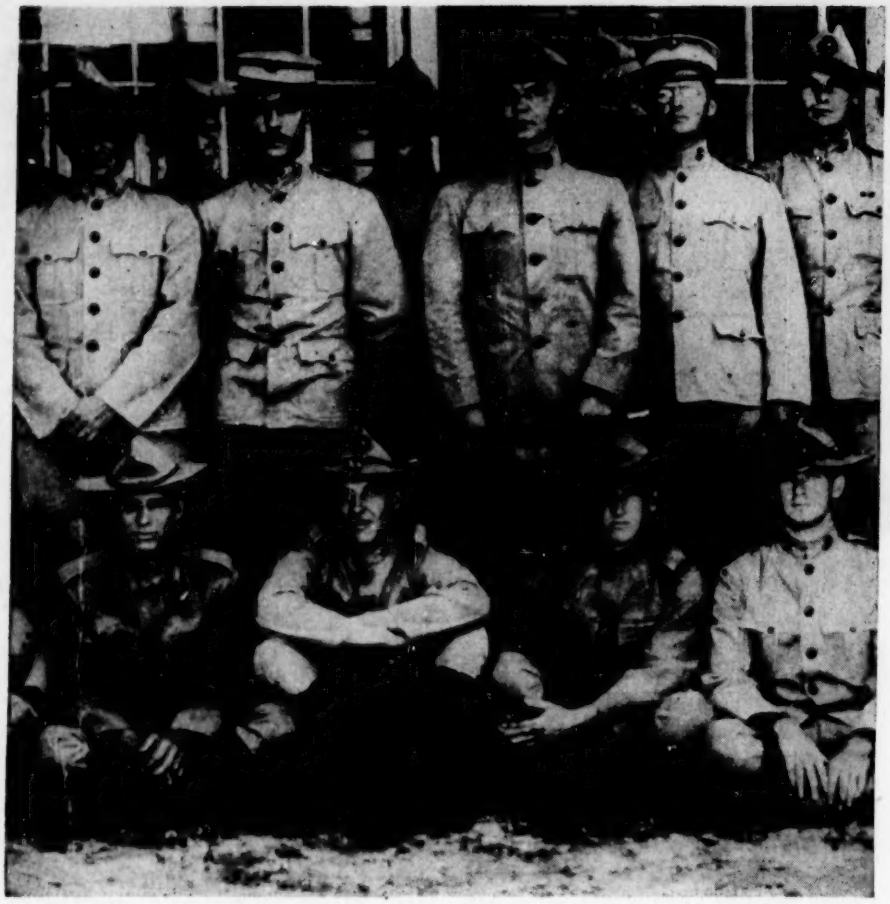
The stage was set for the Second Great War. The Marine Corps could carry out its amphibious mission with the Fleet Marine Force. From the combined efforts of Headquarters Marine Corps, the units in the field and the schools, there had evolved a sound doctrine.

On the eve of Pearl Harbor there were less than 2,000 officers in the Corps. When the surrender aboard the USS *Missouri* was signed there were 37,000. Some 15,000 officers had been commissioned at the Marine Corps Schools and 20,000 other officers had passed through the other various wartime courses offered at Quantico. The amphibious requirements for many war operations had not been foreseen in their eventual amplitude. The phenomenal increase of the Corps would not have been considered a likely possibility in 1939. And yet when these issues arose the Marine Corps was ready.

The Marine Corps Schools at Quantico ultimately operated seven courses during the last war. The first major problem which faced the schools was the vastly expanded training of young men for commissions. This effort absorbed the majority of the Schools' facilities. By 1943, however, it was realized that the greatly expanded Corps also required trained staff officers. Accordingly, the Command and Staff Course was established early in that year and eventually produced 500 graduates. When the war ended the schools began a period of demobilization. The Basic School, Junior School and Senior School were retained. This marked a return to the fundamental organization of the schools started in 1922. In addition, the Ordnance School and Communication Officers' School continued to function as resident activities.

The staff at Marine Corps Schools in the early days had served a dual purpose. First, in the instructional field it had provided the personnel to research, study and develop the concept of amphibious warfare. This latter effort found its voice in the publication of manuals which guided activities in the field and were the basis of instruction in the schools. The transition from research to instruction was relatively simple since these functions were vested in the same individuals. This was possible because the Marine Corps was small, students few and the organization of the schools less complex than it is today.

After WW II, the position of the Marine Corps within the armed forces became more clearly defined by specific legislation. The size of the Marine Corps was greater than before the war and its responsibilities in the research and development field were now a matter of record. While instruction and research are intimately related, it became most difficult to have instruction and the broader aspects of research carried out by the same staffs. Accordingly, in 1950, the Marine Corps Schools were reorganized to include two major divisions. The Marine Corps Educational Center assumed the duties of providing instruction in the various schools. The Marine Corps Development Center was charged with the development in coordination with other agencies, of tactics, techniques and equipment



1909 — Port Royal. Lieutenant A. A. Vandegrift (sitting, far right)

for use by Marine Corps forces. This is the basic organization which exists today.

The policy which governs officer training in the Marine Corps is found in paragraph 24050 of the Marine Corps Manual. This states in part, "In general it shall be the policy to assure the military schooling of commissioned personnel as a whole rather than comprehensive schooling of a small minority." The primary agency which carries out this policy is the Marine Corps Educational Center, at the Marine Corps Schools, Quantico, Virginia. The schools at Quantico had formerly come under the Marine Barracks. However, between 1946 and 1948 there was a series of changes in the title of the Marine Barracks. Ultimately, the name Marine Barracks disappeared and Marine Corps Schools became the major organization at Quantico. This change reflects the emphasis which is placed on education at Quantico.

At the Marine Corps Educational Center the newly commissioned officer begins his "graduate work" at the Basic School. After the officer becomes a captain or a major he returns to Quantico and attends the Junior School. Finally, he is assigned to the Senior School when he has advanced to the rank of lieutenant colonel or colonel. This is the command and staff education available to all Marine Officers at the Marine Corps Schools. In addition to these schools, Marine officers are invited to attend courses offered by Army, Navy and Air Force educational institutions. A few officers may also attend courses at Allied schools. To supplement these formal resident schools, the Marine Corps also provides a large variety of correspondence courses and continually encourages officers to keep abreast of military affairs by a personal study program arranged to meet the individual's requirements. The correspondence courses on military subjects are provided by the Extension School which is an agency of the Educational Center.

Specialist training is provided by a variety of schools. Two of these, the Ordnance School and the Communication Officers' School, are in the Educational Center. The Educational Center also conducts two other specialist schools which are convened annually under specific directive of the Commandant of the Marine Corps. These two schools are the Naval Gunfire Officers' School and the Air Observer School.

These "Other Schools at Quantico" and the "Basic School" will be discussed and described more fully in articles now being prepared by LtCol Robert W. Glickert and Colonel R. L. Murray, respectively. They will appear in a forthcoming issue of the MARINE CORPS GAZETTE.

In addition, Marine officers enjoy the privilege of attending a large number of specialist schools run by the Army and Navy. However, when they attend the Junior or Senior Schools they find in their classes representatives of most of the military skills, to include both ground and air officers. The policy of the Marine Corps is thus, not only of providing continuing education for all its officers, but also to give them the same command and staff training regardless of specialty. In the final analysis, all officers are expected to have an understanding of the many functions of the Corps and particularly of the Fleet Marine Force.

There is, in addition to the defined policy of officer education, another point of note which may be termed the philosophy which guides officer schooling. This philosophy derives from the very nature of the Corps' major responsibility; the amphibious operation. Amphibious operations may be conducted in almost any geographical area where the sea areas are sufficiently large to permit the movement of the shipping involved. Hence, an understanding of the physical factors which influence combat in a variety of terrains and climates is essential to the Marine. This type of operation involves combat on land. Thus, the complex problems of land warfare must be mastered. The amphibious operation depends, initially at least, upon a careful integration of air and naval gunfire support. Marine officers must have a sound knowledge of such supporting means and an almost instinctive response to the problems of their effective coordination and employment.

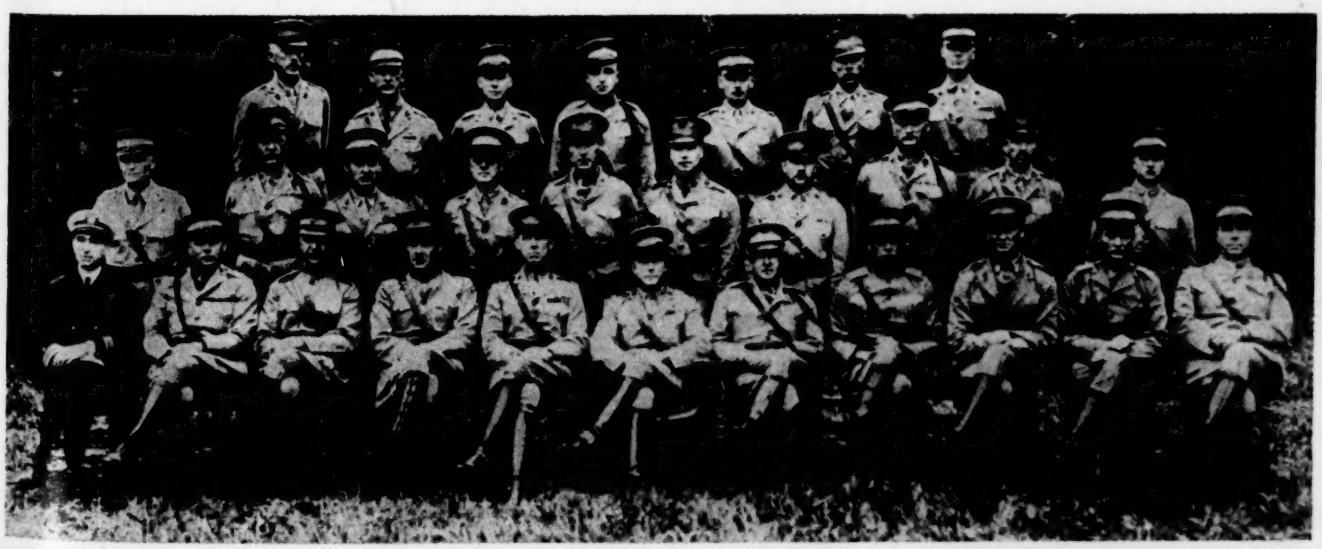
The question of movement to the objective area and the ship-to-shore operation, require an understanding not only of the characteristics of naval vessels, but also some of the limitations on their employment. As the helicopter continues to develop the execution of the vertical envelopment, it introduces many new factors into the amphibious attack.

Lastly, in the amphibious operation there is an intimate association with the problem of logistics at all echelons. All the impedimenta that units will initially need must accompany the force. Units are distributed in many ships and these must be loaded in such manner as to best carry out the scheme of maneuver. In land warfare major logistic planning is done primarily at the Field Army echelon. In the amphibious operation this concern is the responsibility of the Commander of the Landing Force. The composition of a Landing Force may range from several reinforced divisions and air wings, to only one reinforced regiment. It is because of this complex nature of the amphibious operation that we find a broad base of instruction in the Junior course as well as in the Senior course.

Formerly, the technique of education was a simple matter. Students memorized their lessons and their ability to remember was supposedly a measure of their progress. Almost a quarter century ago the Marine Corps began to depart from this conventional concept of instruction. Today the mechanical, "formula type" approach has largely disappeared from the schools. The Marine Corps Development Center and the Marine Corps Educational Center work closely together. As new equipment is made available, it receives at least partial theoretical feasibility testing in schools problems.

The development of new tactics and techniques, a responsibility of the Development Center, depends in part, upon the advice and assistance rendered by the Schools. Students of the Senior and Junior Schools concern themselves not only with using the equipment and techniques of today, but also consider what will be done tomorrow. In their courses they are required to make the type of decisions they may have to make in combat. They make these decisions on the basis of the tactics, techniques and equipment currently in use. They are also asked to decide how certain future problems involving factors now under study can be solved. This progressive approach to education with its constant emphasis upon developing individual thinking can perhaps best be summed up in the word "flexibility." The basic policy of the Educational Center goes beyond giving the student the information he needs to solve his problems at school and later in the field. The Center strives to awaken the students' curiosity and inculcate in him the desire to learn. The student is encouraged to approach his task not with a pat, stereotyped answer, but with the flexible spirit which successfully adapts to reality.

The Junior and Senior Schools complement each other and have much in common. Statistically they are both of nine months' duration. They divide their instruction into approximately the same phases. Their major difference, as their names imply, is in the mission. The Junior School is charged with the training of Marine officers for the command of battalions or squadrons and for all aspects of staff duties at regiment/group and division/wing levels. The Senior School trains its students for command of regiments or groups and for all aspects of staff duty at division/wing and landing force levels. These missions each contain two significant points. First, there is the equal emphasis on air and ground units. This is ample evidence of the importance which the Marine Corps attaches to the air-ground team concept. The second point of note is the emphasis on training for all aspects of staff functions. It isn't operations that is important, nor intelligence, nor ad-



COMMANDING OFFICER AND STAFF, MARINE CORPS SCHOOLS, QUANTICO, VA., 1927-1928

Front Row (left to right): LCdr W. W. Broadbent, USN; Maj R. S. Geiger, Maj W. Thing, Maj W. C. Powers, Jr., LtCol W. P. Upshur, Col R. H. Dunlap, Maj R. L. Denig, Maj H. H. Utley, Maj C. J. Miller, Maj O. Floyd, Maj H. L. Larsen. Center Row (left to right): Capt R. Arnett, Capt G. B. Erskine, Capt L. D. Hermle, Capt A. W. Jacobsen, Maj K. E. Rockey, Capt L. H. Miller, Capt J. M. Arthur, Capt F. G. Patchen, Capt F. Harris, Capt C. O. Henry. Back Row (left to right): ChMarGun J. J. Mahoney, 1stLt S. E. Ridderhof, Capt D. R. Nimmer, Capt R. E. Knapp, Capt O. T. Francis, 1stLt E. A. Pollock, ChQmClk B. Eagan.

ministration, nor logistics, nor any one staff function. Rather, all are equally important and training must cover all staff functions.

Field problems and demonstrations have for many years been widely used in service schools. The Junior School and Senior School continue to use this effective instructional technique, although to a lesser degree in the latter school. Perhaps the one outstanding joint exercise of the two schools is "Packard." This is an amphibious command post exercise lasting about one month. During one week of this period, the students from the Marine Corps Schools go to sea and carry out plans which they have previously made for a landing operation in the Camp Lejeune area. Every effort is thus made to introduce into the curriculum of all schools the maximum amount of realism.

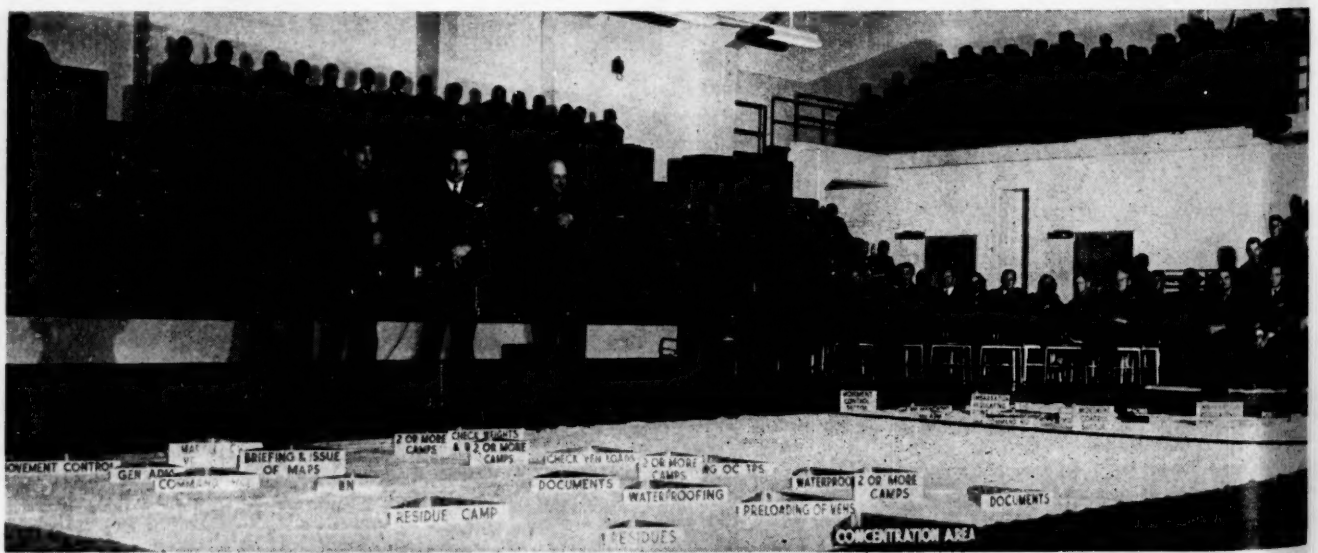
The Junior Course includes over 600 hours of instruction on command and general staff subjects. In addition, other major subjects covered include: aviation (100 hours); naval gunfire and artillery (65 hours); mechanized warfare (55 hours); engineer (36 hours); naval subjects (16 hours); communications (26 hours) and atomic warfare (22 hours).

The Senior course provides some 550 hours of instruction on command and general staff subjects. In addition, other major subjects covered include: aviation (85 hours); naval gunfire and artillery (50 hours); mechanized warfare (38 hours); engineer (25 hours); naval subjects (27 hours); communications (13 hours) and atomic warfare (54 hours).

Instruction in both schools stresses the integrated type of problem. In this form of instruction the student is given a general situation from which a battlefield situation is developed. Students are required to consider, in arriving at their solutions, the interplay of various arms and services, rather than focusing their attention on only one facet of the situation at hand. Thus, for example, the deployment of a unit for a defensive mission is studied not only in the light of infantry formations, but also in relation to the supporting arms available, the tanks, engineers, the air situation and the general logistic and administrative limitations which govern. The integrated problem is a device widely used, again to bring realism to the classroom.

There is a considerable amount of time devoted to atomic warfare. In addition to this specialized instruction, the influence of these potent weapons are considered in many problems. The general breakdown of subject hours given above indicates only the hours during which a particular subject dominates the instruction, but actually the various arms and services are considered in most integrated problems. This results in an actual increase of time

BrigGen Randolph C. Berkely



Students come from all over the world to study amphibious warfare at Quantico . . .

being devoted to any given subject above that indicated in the schedule.

In keeping with the policy of maintaining the most up-to-date type of instruction, new developments are constantly considered. For example a large number of problems have written into them a helicopter capability. This serves to familiarize the student with the versatility of this new device and also permits the elaboration, in part, of a sound doctrine covering the employment of the helicopter in a variety of situations.

No mention of the instruction provided by these schools would be complete without mention of the Instructor Orientation course. Since 1944 there has been in operation, at Quantico, a course of instruction designed to train new instructors. All teaching personnel must successfully complete this course. The Instructor Training Section, a part of the Educational Center, also provides a series of periods for the Junior and Senior School students, as well as the students of the Basic School and Communication Officers School. During these hours the students are taught effective teaching methods and are given the opportunity to present a number of talks under carefully controlled conditions. The Marine Corps realizes that much of an officer's time is spent in teaching. Accordingly, it believes that effective speaking and a knowledge of how to organize and deliver a talk is of great importance. The time devoted to teaching students how to teach equips the graduates of the schools with the ability to put across to others what they themselves have learned as students.

The emphasis in the schools is naturally on study, both as part of the instruction and as collateral reading. To meet this need the Breckenridge Library provides, in some 16,000 volumes, the most comprehensive collection of literature on amphibious war. There are also a wide variety of books on historical, political and geographical subjects. In addition, some 50,000 pieces of classified material and over 60,000 other non-classified papers, studies, pamphlets, etc., are available in the Record Section as reference data. These documents include operation reports for most of the major engagements of the armed forces during WW II and in Korea. Further, the staff of the Development Center, located in a building adjacent to the Educational Center, is also always ready to assist, advise and make available their studies to interested officers.

A large, complex organization such as the Marine Corps Schools requires a considerable supporting establishment. Among the organizations whose services are essential to the operation of the Schools, there may be mentioned the Reproduction Section originally established in 1922. This activity publishes all instructional matter used in the various schools. In addition there is a Training Aids Section which prepares wall charts, slides and other visual aids. This Section includes a film library which serves not only the schools but also Marine units on the East Coast of the United States. Schools Demonstration Troops furnish the personnel and equipment used in field problems and command post exercises. Other subordinate commands provide the administrative assistance and the supply functions, which in turn free the schools for their academic responsibilities.

In an article in the December 1929 issue of the MARINE CORPS GAZETTE, Colonel Breckenridge discussed service schools. He stated in reference to education that "there is no progress without criticism." These words have been taken to heart by the Educational Center. Through its Coordination and Evaluation Section, the Center continually keeps the curricula of the schools under surveillance. The schools themselves carefully note student reaction and require an evaluation of each period of instruction by the instructor immediately after he has presented his material. Instructional material is published for only one class to insure that it will be reviewed annually and will therefore be as current as possible. Each year new problems are written while old instruction is withdrawn.

This steady evolution of instruction, and its emphasis on timeliness, is evidence of the desire of the schools to provide the students with a rewarding period of education. Officer students have no duties other than being students. At the schools they are given the opportunity and the guidance to review their past experience to evaluate the lessons of current operations and to consider the influence of changing equipment and techniques. In summation, the courses of instruction are designed to permit the student to prepare himself for the heavier responsibilities to follow. USMC

. . . after graduation, they return to carry out the concepts developed and taught at MCS

COORDINATION

For an efficient military organizatio

SOME YEARS AGO THE GERMAN General Freiherr von Hammerstein-Equord made this observation about the officers under his command:

"I divide my officers into four classes as follows: The clever, the industrious, the lazy and the stupid. Each officer always possesses two of these qualities. Those who are clever and industrious I appoint to the General Staff. Use can, under certain circumstances, be made of those who are stupid and lazy. The man who is clever and lazy qualifies for the highest leadership posts. He has the requisite nerves and the mental clarity for difficult decisions. But whoever is stupid and industrious must be got rid of, for he is too dangerous."

This categorization may not be empirical but it will serve to introduce a problem concerning the "clever and industrious" who make up the staff – those who coordinate but do not subordinate; those who are coordinates but not subordinates.

In the development of an effective and efficient staff, the factor of coordination becomes a matter of considerable importance. The function of the staff being to consider and advise on major aspects of command, Personnel, Intelligence, Operations and Training, and Logistics, it follows that a plan involving the command as a whole must bear the imprint of coordination between and among the several staff officers. Coordination, in its military sense, implies little more than the dictionary term: the act of regulating and combining so as to give har-

NOT SUBORDINATION

rank for equal jobs on the staff

By Maj R. S. Stubbs II

monious results. The additional factor being that concurrence of interested parties is sought, and that failing, resolution is obtained by higher authority.

But coordination in a staff is ideally sought and seldom achieved, at least to field manual perfection. The interjection of personality creates a situation where the consideration of equals (coordinates) becomes the reaction of unequals (subordinates). We have all seen the situation where one staff officer, because of his rank, his personality or the special situation, becomes dominant in the staff and the balance of the staff becomes little more than a debating society. The self-appointed executive officer or chief of staff has usurped the responsibilities of his brothers on the staff, and the staff ceases to function as such. The usurper becomes so involved in the mechanics of other staff sections that he often overlooks the requirements of his own. This type of situation seems to arise most often in the infantry battalion staff where we have a "Big Three" complex. Admittedly, under most combat circumstances, the S-3 is the staff officer immediately concerned with the fate of the unit. But a fire-fight doesn't diminish the requirements for personnel, good intelligence or logistical support. Rather, these requirements are accented by the intensity of combat.

Now, recognizing the mischief in the origin of the problem in this situation does not *ipso facto* remove the difficulty. The special situation of itself does not justify the reduction of a staff from four to one in

effect. It may, does and should emphasize certain aspects which are not prevalent in the normal situation. We will always be faced with special situations of one type or another so we must turn elsewhere if we would correct or ameliorate the condition set forth.

The born leader, the hard charger, or any other description of the staff officer whose personality makes his section dominant in the counsels of the camp, is controlled only by the psychological abilities of the executive officer or chief of staff and the commander. Educating him to the responsibilities of his own and other staff sections is a step in the right direction, but consideration of others, self-restraint and modesty are not taught so simply. The development of a staff personality may operate to overcome the individual personality when such endangers smooth operation.

We can turn to the rank problem and seek some measure of a solution there, for this is an element controllable in advance. The special situation can be anticipated but not predicted exactly; officers can be trained but not re-created. But a table of organization can be manipulated, altered and improved upon. Let's look at the rank differentiation and see how it affects the operation and functioning of our staffs.

We have noted earlier that the staff which is efficient and effective, coordinates between and among its own members; it also coordinates with the commanders of echelons below that represented by the staff. This coordination, if we accept one connotation of the word, is accomplished between equals. There is no doubt that one staff officer (of the same staff) is the equal of another in the eyes of the military *doctrinaire,* nor that one one commander (at the same echelon) is the equal of the other. But inject rank into the picture and the scenery changes. A unit commanded by a captain is intangibly more important than one commanded by a lieutenant, even though both are called companies. A staff section headed by a major is deemed more important than one headed by a captain. A battalion staff officer of the rank of major is superior to a company commander of the rank of captain, though certainly not because of the jobs they hold. A battalion S-3 who is only a lieutenant becomes less important than a captain, company commander (other aspects of the "Big Three" and "Little Three" complexes).

From the foregoing it appears to be in order that we reach some conclusions with respect to our staff officers. A staff should be composed of coordinates, equals in the dictionary sense and also in the military sense. That is, Personnel is as important as Logistics, etc., the officers therefore should be of equal military rank. And since the function of the executive or general staff is not to command, or to obey the commanders of echelons below the level of command represented by the staff, the staff officer should be of the same military rank as the commander of the unit which is controlled by their immediate superior (e.g., a battalion staff officer should have the same rank as a company commander). These propositions seem to be basic, with respect to the operations of a staff, both internally and externally.

But our tables of organization do not reflect these propositions. Let us examine them graphically, as they now appear under the "K" and "L" series of tables, and as they compare with the propositions expounded.

The proposals made would result in a net shift, in the infantry units affected, of 18 majors and nine lieutenants in favor of the acquisition of 15 captains, eight lieutenant colonels, and four colonels. At division level, where appropriate recognition was formerly given to the staff procedure of coordination, we now have general staff officers who are junior in rank not only to the commanding officers of subordinate units but also to special staff officers whose activities they theoretically coordinate.

The proposals may be deemed a plea to boom Personnel and bust Operations; but, in view of earlier comments, it should be recognized that the rank equalization is practically the only step which can be made objectively and the proposal for such action is made without regard to any particular staff assignment. The increase in staff rank at regimental level should operate to enhance the staff functions below division.

Admittedly, this presentation does not represent an exhaustive staff study wherein careful consideration has been given to Marine Corps-wide personnel strengths or availability of specific ranks dealt with. But it does seem that with pen in hand and a T/O upon which to write, we can strike a blow *for* coordination and *against* subordination.

USMC

BATTALION

	K (War)	K (Peace)	L	Proposed
S-1 (Personnel)	Lt	Lt	Lt	Capt
S-2 (Intelligence)	Capt	Lt	Capt	Capt
S-3 (Operations)	Maj	Maj	Maj	Capt
S-4 (Logistics)	Capt	Capt	Capt	Capt
Lower Unit Commander	Capt	Capt	Capt	Capt

REGIMENT

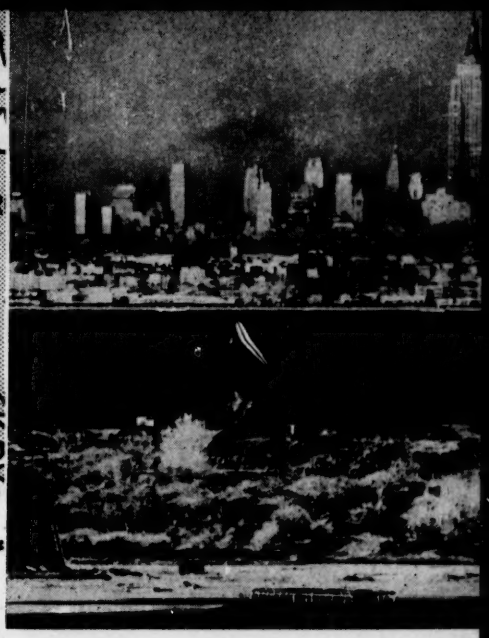
	K (War)	K (Peace)	L	Proposed
S-1	Capt	Capt	Capt	LtCol
S-2	Maj	Capt	Maj	LtCol
S-3	Maj	Maj	Maj	LtCol
S-4	Maj	Maj	Maj	LtCol
Lower Unit Commander	LtCol	LtCol	LtCol	LtCol

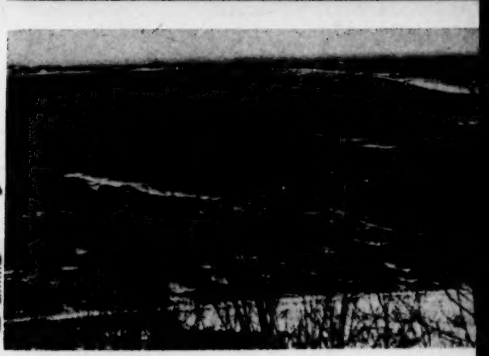
DIVISION

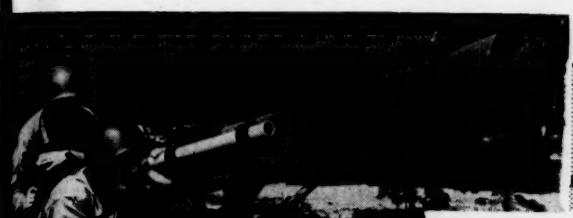
	K (War)	K (Peace)	L	Proposed
G-1	Col	Col	LtCol	Col
G-2	Col	Col	LtCol	Col
G-3	Col	Col	LtCol	Col
G-4	Col	Col	LtCol	Col
Lower Unit Commander	Col	Col	Col	Col

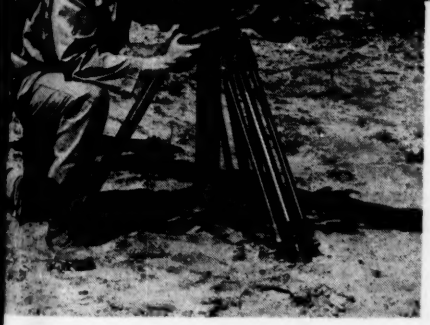
in brief

The Army has a new 100-inch camera with an infra-red lens that records in detail, tanks, jeeps and personnel carriers six miles away and cuts through atmospheric haze up to 35 miles. In a test held recently at Atlantic Highlands, N. J., a photo was taken of the New York skyline 26 miles away. The photo, lower right, was taken with an ordinary press camera, while the photo above it was taken with the new one-eyed giant. The land in the foreground is the tip of Sandy Hook, New York City harbor entryway, four miles from the camera.









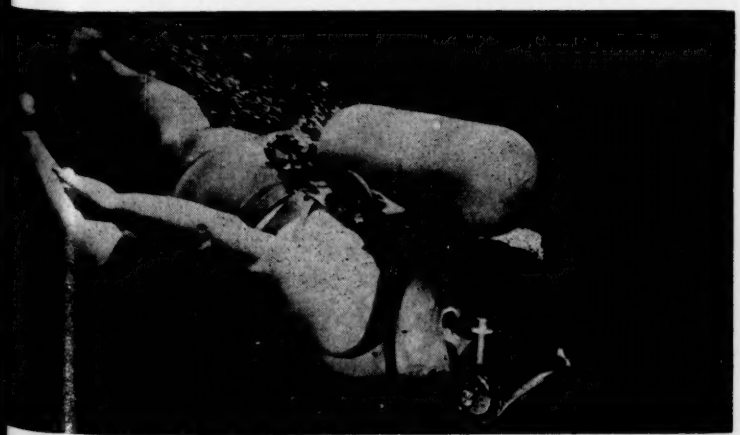
An underwater breathing apparatus (below) which permits the wearer to swim freely for half an hour at a time, has been developed by Scott Aviation. Features of the unit make it ideal for underwater demolitions.

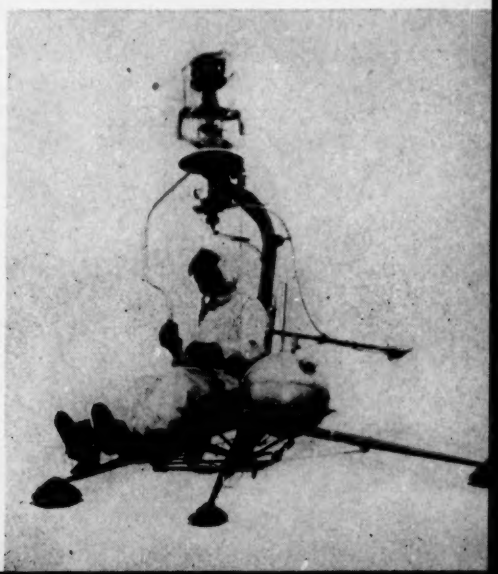
Last month we stated there was a military mistake somewhere in the issue. As we go to press, no one has come up with the right answer. Dig out a copy and turn to page 43. You will note that in the artist's illustration, lower right hand corner, the color guard is not in step with the rank in front. Very minor, you think! You'd be surprised at what our readers *don't* miss.

A new Armed Forces Standard B Ration will soon replace the present B-type Marine Corps unit. The new ration will enable all services to utilize non-refrigerated meals.

One of the important developments in Naval aviation since WW II is the new British invented steam catapult. With this type catapult, now installed in U. S. ships, our carriers can launch as many as 32 interceptor planes in four minutes.

The Navy rocket-powered one-man helicopter (below), has been developed for research into gyro-stabilizing controls for helicopters. Called the KH-14, it has incorporated controls to give it greater stability in the air than was heretofore possible.





STANDARDIZE
the marking system

By Capt John E. Forde, Jr.

WHILE SERVING AS COMMANDING officer of a rifle company in the 2d Marine Division at Camp Lejeune, my battalion joined some 600 recruits just prior to moving out on the "Med" cruise. All of the 600 had finished "boot camp" and were reporting in from their boot leave.

My service record book clerk entered the "joined" entry on page three (Record of Service) and brought the books of 190 recruits into my office for signature.

It was interesting to note that all of the books, without exception, were marked "4.0" in conduct and "5" in proficiency. It was apparent from looking at pages six (Weapons Record), ten (Civilian Background), and 12 (Offenses and Punishments), that all of the 190 recruits I had just joined were not "4.0s" and "5s" as indicated.

Somewhere along the line of mass production in administration someone had not taken the trouble to evaluate each recruit. As a result, pages three and four (Chronological Record of Primary Duties) of the service records of my new men told me *absolutely nothing!* They had all been graded alike! The easy way out for some drill instructor, recruit company commander or battalion adjutant.

I checked back through each record book and kept track of the marksmanship ability of each of the new men. They were all 0300s (Basic Infantryman) and knowledge of rifle marksmanship was a prime requisite. On a percentage basis for marksmanship it worked out as follows:

Expert Rifleman	10%
Sharpshooter	31%
Marksman	53%
Unqualified	6%

Based on marksmanship ability alone, the proficiency grade of the individual recruit should have differed! Surely a man who fires the standard range qualification and qualifies as an expert rifleman with the M1 rifle cannot be classified as "average" (as indicated by a "5" in proficiency), and the recruit who fails to qualify be put on a par with the rifle expert by also giving him a proficiency marking of "5."

I am not advocating that all Expert Riflemen be given a "9" in proficiency and that all men who fail to qualify with the M1 rifle be given a proficiency marking of from zero to "4." Not at all. It would be nonsensical to give a man a mark in proficiency for rifle qualification alone. However, I do feel that various factors in recruit evaluation should be considered.

At present I have a recruit company with a total strength of about 900 recruits—12 platoons of approximately 75 recruits per platoon. It is reasonable to assume that I personally, cannot evaluate the individual recruit. How, then, can I give a reasonable, accurate and fair proficiency and conduct marking to each recruit upon graduation?

Twelve drill instructors will have 12 different ideas on how to evaluate the proficiency of the recruit. To minimize the large discrepancies bound to stem from the different personalities, I did this. First, I mimeographed paragraphs 11206 and 11207 of the *Marine Corps Manual, Volume I* and distributed copies to all drill instructors. Secondly, I held a school period on these paragraphs and cited hypothetical case evaluations in order that each drill instructor obtained a standard sense of values for marking within this recruit company.

To further the standardization of the proficiency markings, and to ensure that personal favoritism plays no part in assigning the recruit's proficiency mark, we let the recruit "write his own ticket" so to speak. How do we do that? Simple.

The recruit takes a total of six written examinations in individual basic subjects, and one "composite" examination which is a review of all previous instruction. All seven of these examinations are multiple choice, true and false type of examination. Special subjects instructors give the exams and grade them. The special subjects instructors grade the examination papers in the space pro-

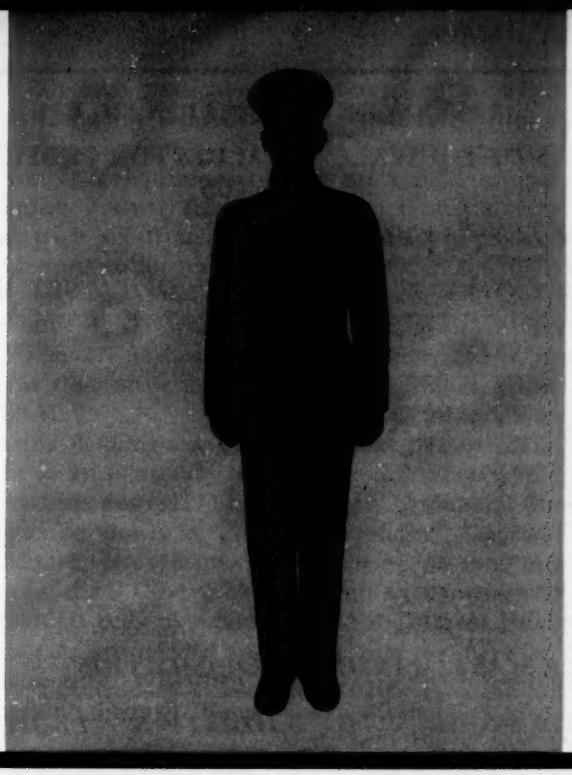
vided at the top of the examination paper alongside the recruit's name and platoon number. That portion of the examination paper is cut off and sent back to the platoon drill instructor who enters the grade on the recruit's evaluation sheet and assigns the appropriate proficiency marking for that grade by referring to the "Table of Equivalent Values" found on the reverse side of the evaluation sheet.

When all seven examinations are taken and the scores and proficiency markings entered on the recruit evaluation sheet, the drill instructor adds a "DI's Evaluation" factor and submits the evaluation sheets to the company commander. The company commander takes the evaluation sheets to the SRB section, pulls the platoons record books, notes the rifle qualification score attained, refers to the "Table of Equivalent Values" and assigns a mark for rifle marksmanship. The average proficiency of all examinations, the DI evaluation factor and the rifle marksmanship factor are totalled and divided by three to attain the final marking. A typical recruit evaluation is shown (right).

As shown, Private Ripple maintained about a "7" average within his platoon. He fired a high qualification score at the range and his drill instructor evaluated him as being an "8" Private in comparison with all other Privates known to the drill instructor during his tour at the Recruit Depot. Note under "Remarks," the footnote which gives the reason for the average grade Ripple received in "Interior Guard Duty."

The assignment of recruit proficiency markings has been made uniform within the company, but what about the other companies within the battalion and the other battalions within the Recruit Depots at San Diego and at Parris Island? That is a question which can be answered only by the personnel at HQMC who make administrative policy. Is the uniform standard submitted here adequate for the needs of the Recruit Depots, and should it be adopted?

Turn back to page three of the SRB if you will. We must standardize the evaluation of recruit conduct markings and the conduct markings of Marines in general. Let us deal



RECRUIT EVALUATION SHEET

I. WRITTEN EXAMINATIONS:	%	PROFICIENCY	
Military customs, courtesies, and discipline	*87*	*7*	
Combat principles (Individual, Fire Team, Rifle Squad)	*92*	*7*	
Scouting and patrolling	*90*	*7*	
M1 Rifle	*100*	*9*	
Interior Guard Duty	*73*	*5*	(See note 1)
Field sanitation, hygiene, First aid	*80*	*6*	
Composite examination	*86*	*7*	
AVERAGE	*86.8* (87%)	*7*	
II. D. I. EVALUATION:		*8*	
III. RIFLE QUALIFICATION SCORE	*235*	*9*	
IV. FINAL RECOMMENDED MARKING		*8*	

REMARKS:

Note 1: Missed all these lectures result of sickness, Depot Dispensary. Studied on his own and took test with platoon.

RIPPLE,	William	F.	0000000	113
(Surname)	(First)	(Initial)	(Serial No)	(Platoon)

(SEE INSTRUCTIONS ON REVERSE SIDE)

Stereotyped markings for recruit Marines are worse than no markings at all. Men should be graded on their individual abilities

(REVERSE OF EVALUATION SHEET)

TABLES OF EQUIVALENT VALUES FOR PROFICIENCY MARKINGS

I. *WRITTEN EXAMINATIONS:*

PERCENTAGE SCORE	*PROFICIENCY MARK*
100%	9
95% — 99%	8
85% — 94%	7
77% — 84%	6
70% — 76%	5
60% — 69%	4
50% — 59%	3
40% — 49%	2
30% — 39%	1
0% — 29%	0

II. *RIFLE MARKSMANSHIP QUALIFICATION:*

RIFLE SCORE	*QUALIFICATION*	*PROFICIENCY*
230 to 250	Expert	9
220 to 229	Expert	8
210 to 219	Sharpshooter	7
200 to 209	Marksman	6
190 to 199	Marksman	5
185 to 189	Unqualified	4
170 to 184	Unqualified	3
150 to 169	Unqualified	2
130 to 149	Unqualified	1
0 to 129	Unqualified	0

III. *DRILL INSTRUCTOR'S EVALUATION:*

Recruits will be graded by the Senior and Junior Drill Instructors on the ability of the recruit to put into practice the basic instructions which the recruit has received in each subject. This grade will be given on a weekly basis and averaged on the *ninth week* inspection; at which time the company commander will mark the service record book of each recruit.

first with recruits.

All too often recruits are given a "4.0" in conduct which indicates, "No offenses. Demonstrated reliability, good influence, sobriety, obedience and industriousness."

If the recruit has seen the battalion commander for office hours once, the recruit gets a "3.0" to "3.9" marking on his page three upon transfer. Any other disciplinary action meted out is considered as prescribed in paragraph 11206, *Marine Corps Manual.*

What about the recruit who has a clean page 12? Does he get a "5.0" in conduct?

In order to standardize conduct markings, we have put into effect the "5.0" for-perfection-in-each-factor system. The factors considered are those described in 11206, *MCM;* i.e., general bearing, attitude, interest, reliability, courtesy, co-operation, obedience, adaptability, influence on others, moral fitness and physical fitness. Let's look at Private Ripple's conduct evaluation sheet (p. 51).

When a drill instructor has occasion to bring a recruit in to me for a minor infraction of regulations, I make a note of the recruit's name, the infraction, date, disposition of the case, the platoon number, and any other pertinent data, on a three by five card which I file. At the conclusion of the ninth training week, when I receive the recommended conduct markings for that particular platoon, I pull the cards for that platoon and check the recruit's card against the recommended conduct mark. If the drill instructor does not show, under "Remarks," that he has taken into consideration the minor infraction(s) indicated on my card, I call the DI in and ask him if he recalls the incident(s) and if he still recommends the proposed conduct marking. If the infraction occurred within the first training week, it is not weighted as heavily as if it were committed during the later weeks. However, in order to be completely fair to those recruits who have clear records, the conduct marking of the recruit with a card in the file is affected by the infraction.

The recruit evaluation sheet being completed for both conduct and proficiency, it can be inserted in the SRB of the graduated recruit for review by his new commanding officer.

It is common throughout the Marine Corps today to send most new Marines through the Infantry Training Regiments at Lejeune and Pendleton for advanced basic training prior to their assignment to another station. This again is an organization that is concerned with training the Marine and sending him on to his new permanent duty station. It would appear, then, that an evaluation sheet should be prepared by the Infantry Training Regiments in order to show the proficiency of the new Marine in advanced basic training.

Were I again a rifle company commander, in any of our three divisions, I would be happy to have such information accompany the SRB. This evaluation — standardized throughout the Marine Corps, of course — would certainly help me in making assignments as CO and would enable me to make a more accurate estimate of the training situation within my company.

I expect the administrators to let loose a volley of protests against the insertion of any "extraneous matter" in the SRB. "If you want the facts," they'll say, "check the entries on pages one through 15. It's all there! You want to know how proficient a man is? Check pages four and seven!"

We've discussed page four, so let's

"check page seven (Individual Training Record)."

What does page seven tell *you?*

It tells me that the man in question has been "exposed" to a given number of hours' instruction on a specific weapon or subject. It tells me the total number of hours he had on each weapon and the proficiency mark he was "assigned" by his commanding officer.

Items 18 through 38 tell me how many hours' instruction per month, in the basic subjects, the individual was "exposed" to during the training year (which, by the way, commences in July and ends in June!); the mark "assigned" (and we don't know whether he took an oral, written or practical exam – or even if he took one at all!); and the "Init." We don't know who's "Init." – but we assume the initial will be the commanding officer's.

The "instructions" on the reverse side of page seven are equally valueless. They leave such a wide latitude in the assignment of a "mark." There is no "Table of Equivalent Markings" to show that a particular percentage attained on an examination is equivalent to a definite proficiency marking.

The entire marking of page seven is the *opinion* of one man—the man or officer marking the book.

There is no "set standard." The "standard" used is not uniform throughout the Corps. The marking officer makes a comparison – favorable or unfavorable, depending on the caliber of Marine with which he has served—to other Marines he has known. The marking officer is required to hazard a guess as to the "levels of knowledge of the same subject possessed by all Marines of the same rank." Paragraph 11210, *MCM*, is of no help. It merely directs your attention to the valueless instructions printed on the reverse side of page seven.

If page seven is going to be used to show individual training received in basic military subjects, why not use that page for basic military subjects only?

Move all the weapons instruction to page six.

All of the phases of instruction shown above the weapons on page seven, i. e., "General," "Nomenclature," "Disassembly and assembly," etc., are all included in the scheduled instruction for each particular weapon prior to firing for familiarization or record qualification.

There is no longer a requirement that we distinguish annual record qualification on page six from "all other firing," since we no longer get the "extra compensation" for being proficient in our T/O weapon qualification. (The *MCM* has not been modified in that respect – see paragraph 11209.1).

When a Marine is assigned the MOS of 0335, he is considered to be qualified as a machine gunner. The job description as set down in the *Manual of Military Occupational Specialties* tells us that. The rank level in that manual tells us what further qualifications are needed to qualify for a given rank. Why then, do we need items one through 18 on page seven?

With the "tightening up" of the qualifications and standards desired in our Marines, it is apparent that a uniform method of evaluating conduct and proficiency should be established. When such a system is devised, that standardized system cannot be used as merely a "guide."

We must have a concrete standard, placing assessed values on the attributes desired in our Marine ranks of all levels. Once these standards have been set, we will be wrong to accept anything less! We cannot set a goal and then tell our subordinates, in essence, that we will settle for anything that falls within sight of the goal. It would be just as appropriate to plan a field campaign with the object of taking a given island—and then quitting the campaign because we have taken the highest land mass on the island and can easily see the remainder of our objective.

I am interested in not only turning out a better caliber of recruit, but in informing his first commanding officer of his limitations and capabilities. I don't intend that the "Recruit Evaluation Sheet—Conduct and Proficiency" should be made a *permanent* part of the service record and kept in the book to the end of the enlistment. However, I do think that we here at the Recruit Depots owe it to the unit commanders in the field to give them an insight into the character of Marine which they are getting, their capabilities, limitations and the method used in computing their conduct and proficiency marks.

Mine is perhaps a "small voice in the wilderness" on this particular topic. These are my views – sift through them. Criticize them (constructively, please) if you will—and if you have a "better mousetrap," drag up a typewriter and air your point of view.

"Observe the turtle—he makes no progress until he sticks his neck out!"

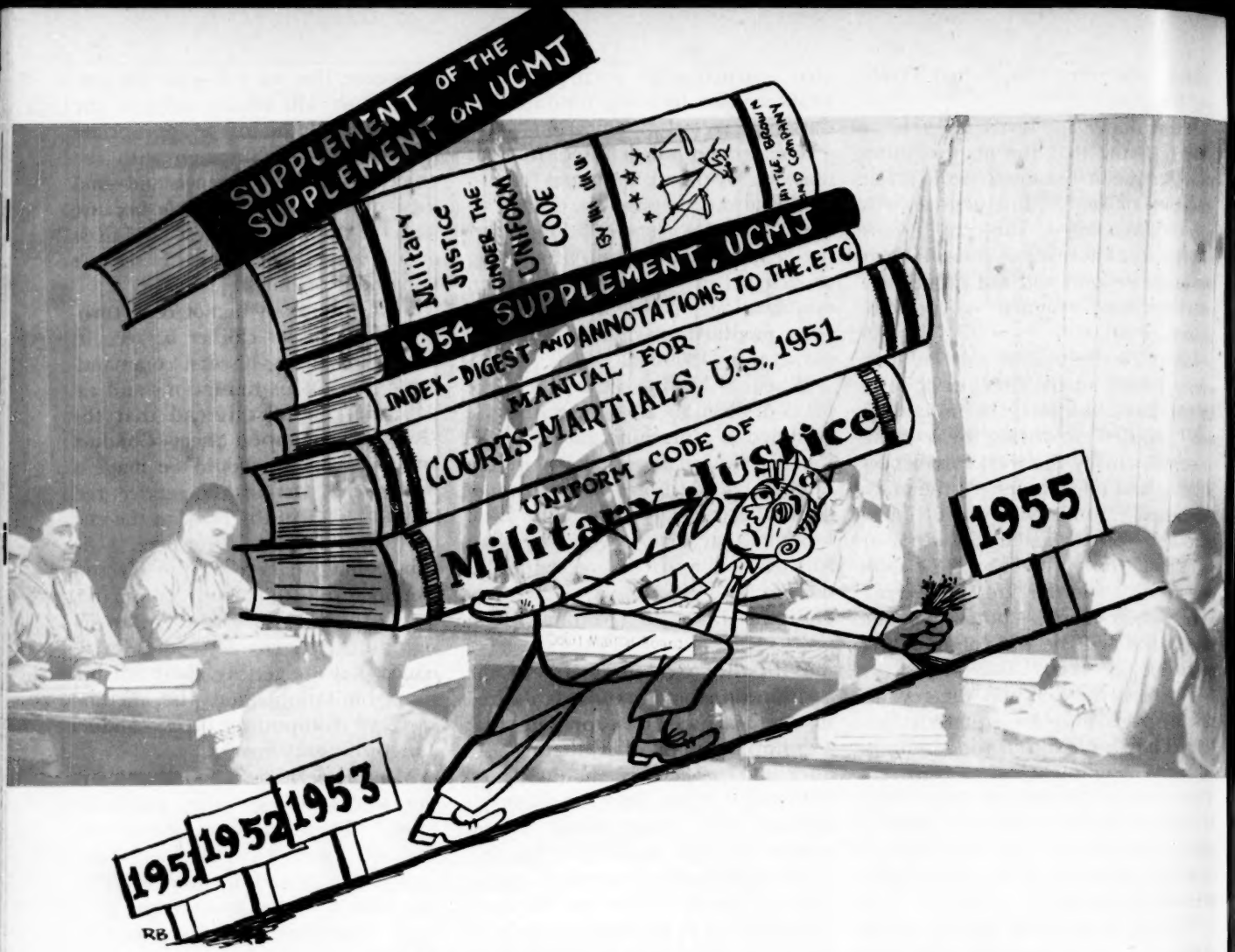
USMC

RECRUIT CONDUCT EVALUATION

General military bearing and neatness	4.5
Attitude	4.8
Interest	4.8
Reliability	5.0
Courtesy	5.0
Co-operation	4.8
Obedience	5.0
Adaptability	4.7
Influence on others	4.4
Moral fitness	4.5
Physical fitness	4.5
TOTAL AVERAGE	4.72
FINAL RECOMMENDED MARKING	4.7

REMARKS: None

RIPPLE,	William	F.	0000000	113
(Surname)	(First)	(Initial)	(Serial No)	(Platoon)


SUPPLEMENT OF THE SUPPLEMENT ON UCMJ
Military Justice UNDER THE UNIFORM CODE
1954 SUPPLEMENT, UCMJ
INDEX-DIGEST AND ANNOTATIONS TO THE ETC
MANUAL FOR COURTS-MARTIAL, U.S., 1951
UNIFORM CODE OF Military Justice
1955
1951 1952 1953
RB

THREE YEARS UNDER UCMJ

By LtCol O. V. Bergren

AFTER WORLD WAR II THERE WAS much criticism of military justice by various veterans organizations and bar associations. The criticisms ranged from command control to severity of sentences. The Doolittle Board met and made a number of recommendations concerning the so-called "caste system" existing in the armed services. In 1948, the Department of Defense was created and unification was the order of the day. It was against this background that the Uniform Code of Military Justice was enacted by Congress in May of 1950.

The transition to the new system of military justice was particularly difficult in the Naval Establishment, inasmuch as it involved changes in procedure and substance from the system which had been practiced for many years under the *Articles for the Government of the Navy* and *Naval Courts and Boards*. Criticisms of the Code were quickly voiced by many commanding officers, generally in tenor that it was too complicated and that it handicapped them in their endeavors to maintain discipline in their units. Conversely, it was not long before articles began to appear in law journals and other periodicals criticizing the UCMJ as being an improvement, but not going nearly far enough toward the ideal of justice completely divorced from any command control.

It would, therefore, appear to be appropriate to examine some of the controversial features of this system of military justice, particularly in the Naval Establishment, after three years' experience under the UCMJ.

Pre-Trial

Non-judicial punishment.—The UCMJ resulted in a substantial reduction of the authority of the commanding officer to punish men in his command for minor offenses. This is particularly true in the Marine Corps. The Articles for the Government of the Navy authorized the commanding officer to confine a man for ten days, or to confine him in solitary confinement for seven days, or to confine him in solitary confinement on bread and water for five days. The UCMJ prohibits con-

Discipline is the keystone of military effectiveness—it depends in a large measure on the administration of military justice. Regardless of its pitfalls, it behooves all of us to be familiar with the UCMJ

finement as non-judicial punishment unless the man is attached to, or embarked in, a vessel, in which case, confinement on bread and water for three days, or simple confinement for seven days, can be imposed.

The loss of the swift and salutary punishment by confinement of minor offenders has been universally bemoaned by Marine Corps commanding officers. There is reason to believe that many men have been reduced in rank because the next most severe non-judicial punishment that the commanding officer could impose was two weeks' restriction, which was considered by the CO to be inadequate for the offense. Thus the man, who would rather spend a few days in the brig than lose a stripe, actually suffers by this provision of the UCMJ.

The authority of the commanding officer to reduce men in rank is dependent upon the promotion authority of the commanding officer. Marine Corps regulations have pegged this to the authority to convene promotion boards for the particular rank involved. This has resulted in many questions as to reduction authority. For example, in 1952 the authority to convene promotion boards for the rank of staff sergeant was delegated by Headquarters Marine Corps to certain field commanders. In 1953 this authority was suddenly withdrawn. This resulted in many questions regarding the legality of reduction of staff sergeants as non-judicial punishment by field commanders, the authority usually turning on the precise date of the reduction.

Appeal from non-judicial punishment — The UCMJ provides the right to appeal non-judicial punishment to the next superior authority if he feels his punishment is unjust or disproportionate to the offense. This right, which was not enjoyed under the AGN, has been exercised frequently and appears to be working well — a definite improvement in this area of military justice.

Accuser concept — Under the AGN, the commanding officer preferred appropriate charges and specifications and referred the case to trial by the appropriate type of court-martial. However, under the UCMJ, any person in the armed services may prefer charges. The charge sheet must be signed and sworn to by the accuser, and if the commanding officer is the accuser he cannot exercise any authority he may otherwise have, to refer the case to trial by general or special court-martial. And even if the commanding officer does not sign the charge sheet, he is still an accuser if he has an interest in the prosecution of the accused other than official interest.

The test of this criterion was prescribed by the Court of Military Appeals in 1952 as "whether the appointing authority was so closely connected to the offense that a reasonable person would conclude that he had a personal interest in the matter." In applying this test to a case in 1953, the same Court ruled that an Army general was an accuser and therefore disqualified from ordering trial by court-martial of a man for wilful disobedience of an order of a superior officer, the order in question being routine straggler orders which were issued "By command of" the general in question.

This startling decision appears to disqualify any commanding officer from exercising his authority to convene special and general courts-martial in any case where the accused is charged with violation of any orders of the command, no matter how routine. It would seem that this rule exceeds the intent of Congress in attempting to protect an accused from malicious prosecution and, unless modified, will result in many needless difficulties in the administration of military justice.

Pre-trial investigation — The requirement of a formal pre-trial investigation, as a prerequisite to trial by general court-martial, is another new requirement of the UCMJ. This "trial before the trial," in which the accused is entitled to be present and to be represented by counsel, is obviously designed to insure that the convening authority will make his disposition of the case in full light of all the facts. While it has accomplished this purpose, it also has resulted in many delays in trial, in many man-hours of work by the officers concerned, in increased difficulties in making the investigation (because of the necessity of the presence of the accused and his counsel at all times) and in additional amount of paper work. In most cases, the requirement of a more informal type of pre-trial investigation, such as that required under the AGN, would provide adequate protection to the accused and would be considerably simpler.

Trial

Law officer and lawyer counsel — There can be no doubt that the UCMJ has been responsible for a big improvement in the professional manner of trial of general courts-martial by providing for a law officer, a lawyer certified by the JAG to be qualified for such duty. The law officer rules on motions, the admissibility of evidence and instructs the court as to the law pertaining to the case. In short, he is the judge

and the court members are the jury.

In requiring that both the trial counsel and defense counsel of general courts-martial be lawyers, the UCMJ further assures trial in a professional manner and provides the accused with a lawyer to represent him at no expense to him.

Instructing the court — Marking another departure from practice under the old system of military justice, the UCMJ prescribes that the law officer of a general court-martial and the president of a special court-martial shall, before a vote is taken on the findings, instruct the court as to the elements of the offense and charge the court on the presumption of innocence, reasonable doubt as to guilt, reasonable doubt as to degree of guilt and burden of proof. The requirement of instructing the court, as to the elements of the offense charged, has been greatly expanded by the Court of Military Appeals. The instructions as to the elements must be entirely complete and accurate. They must also contain instructions on lesser-included offenses that are in the evidence, any affirmative defenses raised, definition of words of legal connotation and many other technical instructions in certain cases where required by the charges and the evidence adduced.

Properly instructing the court is becoming so complex that it is becoming increasingly difficult for the law officer to avoid committing prejudicial errors. When it is considered that the law officer is a lawyer with experience in military justice, the plight of the lay officer with no experience in law, trying to carry out the duties of president of a special court-martial, can be appreciated. He is bound by the same technical requirements as to instructing the court as the law officer of a general court-martial. And these refinements are not neatly laid out in any manual — they have to be ferretted out of the myriad rulings of the Court of Military Appeals. In cases involving any complications, this is a difficult, if not impossible task for the inexperienced officer. It must be remembered that his assignment as president of the special court-martial involves also the requirement of ruling on admissibility of evidence, motions, and other questions of law.

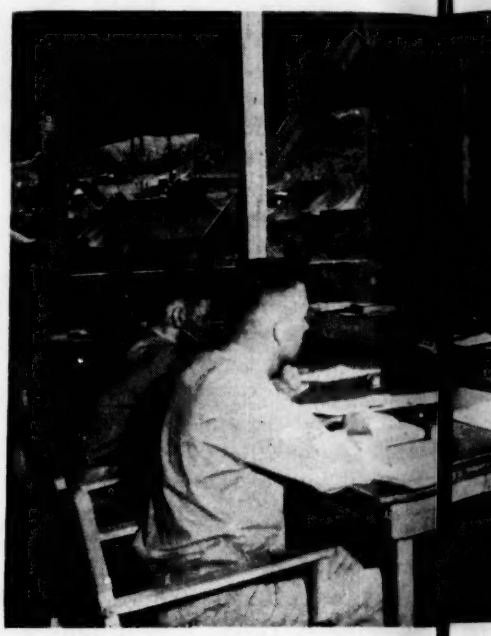
Compulsory self-incrimination prohibited—Article 31, UCMJ, prohibits compelling any person to answer any question which may tend to incriminate or degrade him, whether he is a witness or not. It also requires that any person accused of, or even suspected of, an offense must be warned of his right not to make any statement regarding that offense and that any statement made by him may be used as evidence against him in a trial by court-martial. It further provides that no statement obtained from any person in violation of Article 31 is admissible as evidence against him.

This protection far exceeds the rights enjoyed by civilian defendants in state and federal criminal proceedings. There, the test of admissibility of an admission or confession is solely whether or not it was voluntarily made. Under the UCMJ, however, such a confession, although clearly shown to be voluntary, is nonetheless, inadmissible unless there is an affirmative showing that the accused was properly warned of all his rights under Article 31 before making the voluntary incriminating statement. This rigid rule has resulted in many voluntary confessions being held inadmissible and many accused persons, either acquitted or convicted, having the conviction disapproved on subsequent appellate review. There is no doubt that it has created much difficulty in the field of law enforcement.

Appellate Review

General — One of the major changes wrought by the UCMJ in the Naval system of justice was in the field of appellate review. Under the AGN, all court-martial records were reviewed by the JAG and approved by SecNav, such approval usually being only a matter of form unless clemency was exercised. The UCMJ has simplified and shortened the review of the less-serious cases and has made much more elaborate and time-consuming the review of the more-serious cases, e.g., cases with a sentence involving at least a punitive discharge or a year's confinement.

Review of less-serious cases — Under the UCMJ, all summary courts-martial and special courts-martial with sentences not involving a bad conduct discharge are given final appellate review in the field. This procedure consists of a review by a Navy law specialist and approval by the supervisory authority; an officer authorized to convene general courts-martial. This has greatly reduced the review time, but nonetheless still provides the accused with



The UCMJ assures t *pro*

two automatic reviews of his case. This system of rapid review has proved very satisfactory and popular.

Boards of review — All special courts-martial with a sentence involving a bad conduct discharge and most general courts-martial, are reviewed in the office of the JAG by a board of review. The UCMJ, in effect, took the JAG out of the military justice business. It requires him to establish one or more boards of review in his office to review the more serious court-martial cases. There are six such boards in the office of the Judge Advocate General of the Navy, each operating like a little appellate court, with none bound by the decisions of another. The JAG must also provide qualified lawyers as appellate defense counsel to represent, before a board of review, any accused who requests such representation.

The percentage of convicted persons who have requested assignment of appellate defense counsel to their

cases has been increasing regularly, rising to 28.9 per cent of all cases reviewed by the boards of review in 1953.

U. S. Court of Military Appeals—Perhaps the most revolutionary change created by the UCMJ was the establishment of the U. S. Court of Military Appeals, consisting of three civilian judges. It is super-

professional manner

imposed over the military justice systems of all services—an additional appellate reviewing agency at the top of the multi-service pyramid. It receives cases from all services and its decisions are binding upon all services. The UCMJ provides for the appointment of a qualified lawyer as appellate defense counsel to represent the accused and an appellate government counsel to represent the Government. Procedurally, the Court functions with the same formality as a U. S. Court of Appeals.

Bearing out the predictions of many, the Court was swamped with cases shortly after it began to function.

The case of U. S. vs Gibson, 3 USCMA 512, 13 CMR 68, decided by the Court of Military Appeals on 18 December, 1953 is a good example. In this case the accused was charged with unpremeditated murder and found guilty of the lesser-included offense of voluntary manslaughter. The law officer had failed to instruct the court upon the elements of the crime of voluntary manslaughter. The effect of this failure to instruct was the issue before the Court.

The decision, involving 25 pages and approximately 18,000 words, purports to clarify the law on this point in view of some confusion which had arisen as a result of two apparently-inconsistent lines of previous decisions of the Court. Although the judge writing the decision refers to the court as "we" in describing the court's ideas relative to this legal issue, he was actually speaking only for himself, because it is a two-to-one split decision, and the other judge in favor of affirming the conviction concurred *in the result only*. In other words, he didn't go along with the reasoning and law contained in the opinion of the court. The third judge dissented vigorously. Yet, this decision was supposedly written to clarify the point at issue.

The decision concludes in the following words:

"It has been said—and with vigor—that the view we propose here operates to undermine effectively the instructional framework laboriously erected by this Court in many sound decisions. Of course, this is untrue. We are as attached to the core of these cases as we ever were—but at the same time we are quite opposed to the notion of riding a good horse to death. This unselective criticism, in truth, is compact of the very stuff of which bugaboos are made, and to express it is to talk through one's hat. Our disposition of this case no more saps our instructional edifice than did our Marsh case strike at the vitals of the administration of discipline in the armed services. . . . To both chimeras we accord the mercy of our silence."

Other Noteworthy Results of the UCMJ

Legal publications—Under the old AGN, a copy of *Naval Courts and Boards* and a set of *Court Martial Orders* placed a person in command of all that he needed on military justice in the military service. Under the present system, however, the following legal publications are printed and distributed:

Manual for Courts-Martial, U.S., 1951 (MCM)
Naval Supplement to the Manual for Courts-Martial (NCMCM)
Digest of Opinions of the Judge Advocates General of the Armed Forces (DigOps) (quarterly paper-bound volumes and annual cloth-bound volumes)
Court Martial Reports (CMR)
United States Court of Military Appeals (USCMA)

Since the Manual for Courts-Martial is a uniform publication for all services, it was necessary to publish the Naval Supplement to it to promulgate all of the many regulations applicable only to the naval establishment. "DigOps" contain, not only digested reports of decisions by the Court of Military Appeals and boards of review in the Navy, Air Force, Army and Coast Guard, but also digests of selected opinions on other legal subjects by the various Judge Advocates General. This is apparently in the interest of uniformity, but has the disadvantage of being uneconomical, since only parts of any one volume are of interest to any one service.

Cost—There can be no doubt that the enactment of the UCMJ resulted in a substantially higher price tag on military justice. Of course, there is no way of measuring the exact cost of the new system, nor of comparing it with the cost under the AGN in view of the large increase in the size of the Navy and Marine Corps since the Korean hostilities started.

However, certain examples of increased cost are obvious. The U. S. Court of Military Appeals did not exist prior to 1951. The fiscal 1954 Defense Department appropriations act allocates $300,000 for salaries for its judges and 39 other employees, and other expenses.

In the Office of the Judge Advocate General of the Navy, there are at present 28 officer-lawyers assigned to duty as appellate defense counsel or appellate government counsel. The board of review system of review is also expensive.

In the Marine Corps today there are 115 officer billets requiring a lawyer, plus 66 additional billets calling for an officer with legal training and experience. In the Navy there are 406 law specialist

billets and approximately 75 additional billets filled by officer-lawyers who are not law specialists. There has been an even greater percentage increase of enlisted and civilian assistants in legal offices. The great increase in the number of people performing legal duties as a primary duty is expensive in manpower as well as in money.

As to the cost of publications, the Navy (not counting the Marine Corps) is spending more than $82,000 this year for the previously-described military justice publications. These books will be distributed to various legal offices to keep them up to date with the cascade of law pouring out of the Court of Military Appeals and the boards of review.

These are only isolated examples. There are, of course, other instances and indications that the Uniform Code of Military Justice is an expensive luxury.

Marine Corps legal officer situation — The AGN, as a matter of statute, did not require any lawyers in its administration. The UCMJ requirements for lawyers have given the Marine Corps a new personnel problem. At the present time there are 86 lawyers among the regular officers of the Marine Corps. As previously stated, there are 115 billets which must be filled by Marine Corps lawyers. This obvious problem has been met so far by two expedients: (1) the use of reserve officer lawyers; (2) the continuous use of regular officer lawyers in legal billets — their secondary MOS. But this is not a satisfactory solution.

Marine Corps policy is understandably against any additional officer specialists. This is based upon the sound conclusion that a small organization cannot support many specialists, and that as many officers as possible should be line officers qualified to command. Yet, the laws of supply and demand, being what they are, cause many Marine officers who are lawyers, including some who had their legal education before they came into the Marine Corps, to be retained in legal work whether they like it or not. This is not only contrary to the policy of career management, but is manifestly unfair to the officers concerned when they come up for selection for promotion.

It would seem that there should be enough lawyers in the Marine Corps so that not more than every-other tour of duty for a regular officer is in legal work. The alternative appears to be having some form of a law specialist program. A third solution would be to ask the Navy law specialists to take over these Marine Corps legal functions, but in view of the inseparable nature of military justice and discipline, this does not appear to be likely or wise.

Navy law specialists — Inasmuch as the UCMJ requires that records of summary courts-martial and special courts-martial not involving a bad conduct discharge be reviewed by a law specialist, and since the Marine Corps has no law specialists, there are at the present time 10 Navy law specialists on duty in the major commands of the Marine Corps. In return for the loan of these Navy lawyers, the Marine Corps is furnishing five lawyers who are on duty in various Navy district legal offices.

Conclusions

Although the foregoing material touches only a few of the more noteworthy features and results of the UCMJ, certain general conclusions can be safely drawn from an examination of the military justice system as a whole. One is that the accused has profited immensely under the UCMJ, and actually is better off being prosecuted for a serious offense by the military authorities than by the civil authorities. Pointing toward this conclusion are the many rights and safeguards the accused now enjoys under the UCMJ. The previously discussed Article 31 goes much further than does the self-incrimination law protecting civilian criminal defendants. The many automatic appellate reviews, and being furnished with a lawyer counsel, not only for trial but for appellate hearings, further bear out this conclusion.

The system is expensive, not only in dollars and cents but, more vitally, in manpower. Whether it is worth it is a question solely for the taxpayers, voters and their representatives in Congress.

The system is complex. It is particularly trying for the officer assigned as president or as trial or defense counsel of a special court-martial. But on the whole, the system is not as complex as many officers think. Even though the Code is three years old, the officer today who has a general comprehension of the system and can find his way around in the Manual for Courts-Martial is the exception, not the

rule. Many commanding officers are afraid of the Code, and there has been a general tendency to turn the entire administration of military justice over to the lawyers or officers with legal experience. Although this situation is gradually changing with the passage of time, there is still a noticeable ignorance and defeatism on the part of many officers, which is one of the principal difficulties in the administration of military justice today.

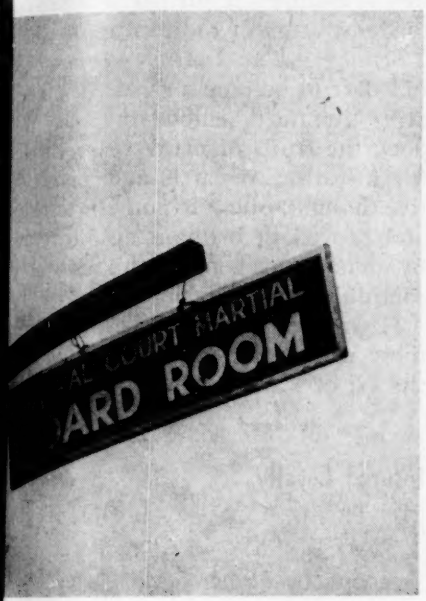
The Code failed to bring about a consistency in sentences. Men convicted in Army courts-martial receive much heavier sentences than do airmen, sailors and Marines. Marines generally receive stiffer sentences for the same offense than do sailors. These are natural results of different disciplinary conditions and problems. But the lack of sentence uniformity is noteworthy in that the lack of consistency in sentences among services was one of the arguments used by proponents of the Code in favor of its enactment.

Recommendations

In their very recent report to the Congress required by the Code, the Court of Military Appeals and the

Judge Advocates General of the armed services made a number of recommendations for amendment of the Code. Some of the more important ones are as follows:

1. To amend Article 15 to increase permissive non-judicial punishments that can be adjudged by a commanding officer to include the loss of half



of one month's pay or confinement up to seven days (even on shore) in the case of enlisted personnel, and forfeiture of half of one month's basic pay for a period of two months in the case of officers.

Reason: to give the commanding officer more authority to punish minor offenders without resorting to court-martial.

2. To provide authority for a general court-martial to consist of only one officer, the law officer, in cases involving *guilty* pleas, providing the identity of the law officer is made known to the accused in advance and the procedure is with the accused's consent.

Reason: to save on the time of the many officers involved as court members in uncontested cases.

3. To provide authority for one officer, certified as a law officer and as competent to perform such duties, to sit as a one-officer special court-martial to hear contested cases as well as guilty pleas, provided: the identity of the officer is known to the accused in advance and the accused, with the consent of counsel, and the convening authority both approve of such procedure.

Reason: to save time of court members and to provide for better trial of cases. The procedure is analogous to the trial by the judge without a jury which is frequently done in civil cases.

4. To provide authority for any lawyer to make the legal review of summary and special courts-martial not involving a bad conduct discharge now limited to law specialists of the Navy and judge advocates of the Army and Air Force.

Reason: to ease this review requirement, particularly in the Marine Corps, and to utilize the many qualified lawyers available.

5. To change the present review procedure by providing that in general court-martial and special court-martial cases with *guilty* pleas, there will be no automatic review by a board of review regardless of the sentence. The accused will have five days in which to initiate an appeal to the board of review, and the review will then be limited to questions of law.

Reason: to reduce reviewing time and work in uncontested cases.

On several matters the Court and the three Judge Advocates General were not in complete agreement. On some of these questions, the Court took the following stand in their recommendations to Congress:

1. To deprive special courts-martial of the right to adjudge bad conduct discharges.

Reason: a substantial number of the cases reaching the Court have been special courts-martial involving a bad conduct discharge, and the court has noted the generally poor manner of conduct of the trial. Apparently they feel that a bad conduct discharge is such a serious punishment that it should not be adjudged by such courts. Further, if their recommendation should be adopted, the Court would henceforth not be bothered any more with special court-martial cases. [Note: the Navy Judge Advocate General took vigorous exception to this recommendation.]

2. To reduce the time of an accused to initiate an appeal to the Court of Military Appeals from 30 to 15 days from the time he receives the board of review decision.

Reason: to reduce the appellate review time.

3. To provide authority, at the request of the accused, to execute a bad conduct discharge prior to completion of the review of his case (if remainder of his sentence has been served). If the discharge is not sustained on review, the Secretary of the Department will be authorized to substitute an administrative discharge, or, at the request of the accused, to restore all rights, privileges, and property of which the accused has been deprived by the execution of the discharge.

Reason: to provide a means of getting rid of such men pending lengthy reviews of their cases.

4. The Judge Advocates General of all services recommended that Article 31 (dealing with self-incriminating statements by the accused) be modified because it is at present greatly hampering law enforcement. The Court took no stand on this point, choosing to wait pending further study of the problem.

As can be easily perceived, all of the above recommendations will effect definite improvements in the administration of military justice, and meet many of the shortcomings previously described in this analysis. It is comforting to realize that the Code is subject to continuing scrutiny by people in authority who are constantly seeking to improve it.

Additional detailed recommendations by the writer would serve no useful purpose. However, the following general observation and recommendation appears to be warranted: When it was enacted, the Uniform Code of Military Justice was facetiously referred to by some as "The Lawyers' Fair Employment Bill." While it is true that many more lawyers are now required than under the AGN, most of them are involved in trying general courts-martial in a professional manner. Nonetheless, the trend that the services should watch closely is the continuing tendency to turn over all military justice functions to the lawyers. The mission of the services is to win wars — not to dispense justice. Discipline is the keystone of military effectiveness. Discipline depends in large measure on the administration of military justice. Accordingly, it behooves *all* people in uniform to become familiar with our system of justice. USMC

passing in review

BOOKS OF INTEREST TO OUR READERS

High Level . . .

STRATEGY—The Indirect Approach: B. H. Liddell Hart, 420 pages, New York 1954, Frederick A. Praeger -Inc. $5.00

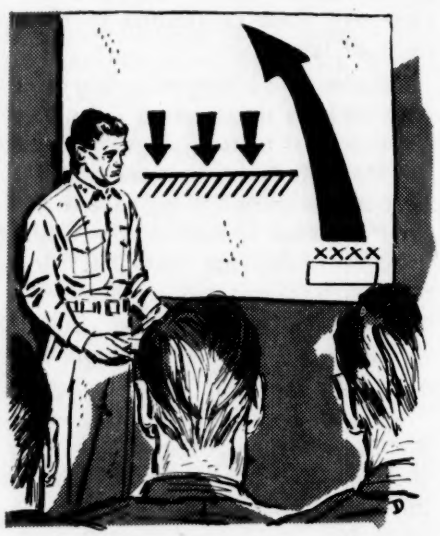
Liddell Hart is the author of some 30 works on military tactics, strategy, training, organization and history. He is generally considered to be one of the most prolific and perceptive military writers in the English language, if not in the world. Testimonials by Guderian, Rommel, Patton and other successful generals attest to the correctness and applicability of his theories.

In *Strategy,* the author's thesis is that in most successful campaigns the loser's psychological and physical balance has been dislocated as an essential prerequisite to his defeat. This dislocation, in the more successful campaigns, has been exploited ruthlessly. Dislocation has been followed by a near bloodless defeat at best, or at least by a battle on vastly more advantageous terms to the side applying the dislocation.

Dislocation, the vital prelude to victory, has been brought about by a strategic indirect approach which may have been either intentional or fortuitous. The indirect approach has taken many forms: the baited move, which draws an opponent out of prepared positions or causes him to overreach himself; the maneuver to the rear, which places forces astride the enemy's line of communications or occupies key terrain; the defensive-offensive, which sets up an opponent for a crushing counterblow; in short, any move which imposes the psychological or physical shock of surprise and avoids action along the line of greatest expectation. The indirect approach, it is also shown, is equally applicable to tactics.

Liddell Hart, in three of four parts, traces in military history the application of this idea. The history of warfare up to the 20th century, World War I and World War II are the periods covered. These principles of the indirect approach are distilled, codified and discussed in a final part. As a dividend, the appendix contains accounts by principal participants of the North African Campaign 1940-42 and the Arab-Israel War 1948-49 wherein the strategy of indirect approach, as formulated by Liddell Hart, was very consciously and successfuly applied.

Liddell Hart has been much maligned for his alleged defensive doctrine prior to World War II. This doctrine is further alleged to have



been responsible for the French Maginot Line complex which is considered to have resulted in their defeat in 1940. Nothing could be further from the truth. Actually, the much maligned "defensive doctrine" of Liddell Hart was a defensive-offensive doctrine – a form of the indirect approach. In truth, the French were defeated by a German application of the indirect approach. The Germans lured the French out from the protection of the Maginot Line and into a headlong advance through Belgium. They then launched their dislocating blow through the "impassable Ardennes" against the weak joint of the French dispositions and across the French lines of communications. The result is history – a further testimony to the strategy of indirect approach.

Strategy—The Indirect Approach bids fair to become a classic in military literature embodying, as it does, the fruits of many years' careful historical research and perceptive thought, plus a hypothesis tested and proved in brilliant application by some of this generation's most accomplished military leaders.

Highly recommended reading for those who aspire to a knowledge of the art of war.

Reviewed by LtCol Brooke Nihart

Insured Loyalty . . .

POLITICAL CONTROLS IN THE SOVIET ARMY—A study based on reports by former Soviet Army officers, by Vyacheslav P. Artemyev, F. Belov, I. Dmitriev, M. Ereli, M. Kolossov, and M. Tuschin. Edited by Zbigniew Brzezinski, Russian Research Center, Harvard University. 89 pages. New York: Research Program on the U.S.S.R. $1.00

The editor of this meaty little pamphlet states its mission clearly and succinctly as early as page two, ". . . to analyze the efforts and techniques applied in the Soviet Union to insure the loyalty of the Soviet Armed Forces . . . (and) to describe in an admittedly incomplete fashion, the system of political personnel, the processes of political indoctrination, and some aspects of secret police vigilance."

Having stated the mission, the editor and his six colleagues listed above, all former officers in the Soviet Army, proceed to accomplish it in a direct, if not always smooth fashion—sketching in a dark and familiar historical background of tight control dating back to the birth of the Red Army in 1918—drawing in the broad intersecting lines of the web-like control pattern and quickly penning a few hasty illustrations from personal experience. The resultant picture is

not highly pleasing in an artistic sense but, after some critical examination, it is lucid. In it are seen the three primary control elements which are woven throughout the Soviet Army structure (and that of the Navy as well) from top to bottom: (1) the Communist Party unit organizations (2) the Political Administration units and (3) the Special Sections of the MVD. The degree and stringency of control exercised by these three elements is depicted as increasing in order of listing. The Party organizations stress basic indoctrination and the build-up of ideological zeal among the troops. The political control elements at the same time try to develop loyalty and pride in the Communist system. Thus, these are positive means of control, positive convincers. The third control element, the MVD Special Section, appears to be more negative in character—the secret police who strive to eliminate all obstacles to the Party and political officers, and remove all possible sources of dissension and disaffection. All three elements are enmeshed in a series of supervisions and reports that would make even a Senate sub-committee blanch.

At the end of the rather straightforward and sometimes contradictory accounts regarding the controls, the editor offers some plausible "preliminary conclusions" regarding their effects. As plus values, he lists the development of a sense of participation in political matters (encountered in his North Korean captors by MajGen Dean), a suppression of expressions or acts of opposition to the regime, and an atmosphere of political unanimity conducive to passive acceptance of the "Party Line." The two obviously negative values noted are the prevalence of strain and fear caused by the continuous informing and the conflict of the strictly military with the political, often causing frustration of the former.

To both political and military students of the U.S.S.R., this little book offers lots of thought-provoking information regarding the strength and weaknesses of the innards of the Soviet military machine and, indirectly, the entire Soviet state structure.

Reviewed by LtCol R. W. L. Bross

Established in 1918

A. M. Bolognese & Sons

TAILOR AND HABERDASHER
QUANTICO, VIRGINIA

Specializing in Evening Clothes Civilian and USMC Uniforms

Servicing Marines both Overseas and at Stateside Posts

Uniforms made to measure. Delivery time ranges from three to thirty days

Approved Swords For Immediate Delivery

Engraved Cards Available With Plate

Campaign hats for sale.
Campaign ribbons sewn by hand.

Quintone boot polish for sale.
Swagger sticks with the name engraved $10.00.

We are now taking orders for green gabardine blouses, jackets, trousers, topcoats with liners, cap covers and overseas caps for delivery next Fall.

The Story of the

THIRD MARINE DIVISION in Japan

2,000 OFFICIAL MARINE CORPS PHOTOGRAPHS COMPILED IN 400 PAGES

(Size 8½ x 11½) Bound in a durable, three-color, embossed, stiff Fabrikoid cover.

This *Pictorial Review* Presents a Realistic Portrayal of 3D MARINE DIVISION Life in the Orient

THIS BOOK IS ON THE PRESS NOW... ORDER TODAY

TAYLOR PUBLISHING COMPANY
P. O. Box 597 Dallas, Texas

Mail postpaid_____copies of the 3d Marine Division Story at $5.00 per copy to:

Name_____

Address_____

City_____ State_____

SEND CHECK, CASH OR MONEY ORDER

The Islamic Brotherhood...

MOSLEMS ON THE MARCH—Friedrich Wilhelm Fernau, 294 pages, maps only illustrations. New York: Alfred A. Knopf. $5.00

This book is written in two parts. Part I explains briefly the history of the Islamic intercontinent. The author discusses the geography of the intercontinent (Moslem areas), the origin and development of Islam, the Moslem community extending from Africa to India and the impact of the Great Powers of Europe on the Islamic world.

Part II covers the Arab awakening—the so-called Arab nationalism. Included in this section are most interesting discussions of newsworthy and familiar items of current interest, such as the Arab League, Mohammed Mossedegh, Pakistan, Kemal Ataturk and the Turks, Moslem Oil, Naguib and Egypt.

The author concludes with an excellent 16 pages in which he faces squarely the problem of peace in the Moslem world (and the world as a whole) in this period of cold war when two strong antagonists have locked horns on the question of stabilization of the intercontinent.

Few people appreciate the Arab mind, the oriental outlook, or even the physical extent of the Moslem world. Few realize that the fighting in Indo China, Malaya and the status of the U. S. of Indonesia all have a vital connection with the problems posed and discussed in this book. To quote part of one paragraph will perhaps reveal this idea more clearly. "It is a long familiar fact that events in one Moslem country excite men's minds in the remotest corners of the Islamic world. This is just as much a fact in the 20th century as in the time of the caliphs. Anyone who strikes a note in Morocco or in the Sudan must be prepared for the Islamic strings to be set in vibration as far as Pakistan and Indonesia. Thus Islamic brotherhood is a living reality in the broad masses of the whole Moslem community, ignoring state frontiers. It is a reflection of popular feeling."

Such questions as the probability of success of the "Dulles line" for the defense of the intercontinent, the policy of the United States with respect to Israel, and Moslem Turkey's position with regard to active association with its Moslem neighbors, are but a few current topics Mr. Fernau weaves into his book.

For a clearer understanding of the Middle East and the impact of its problems on the struggle between Democracy and Communism, I recommend this book as a *must*. However, I would recommend that the reader select, prior to reading this book, at least one book from the excellent bibliography which Mr. Fernau has compiled and appended.

My personal suggestion would be a book which will make the reader aware of the Arab per se, namely *The Arab Awakening* by George Antonius.

Moslems on the March is an excellent book for the professional soldier, especially in this age of "enlightened" news reporting and rapid current events coverage. In my opinion, this volume will stimulate a more accurate analysis of current events emanating from a critical area of the world.

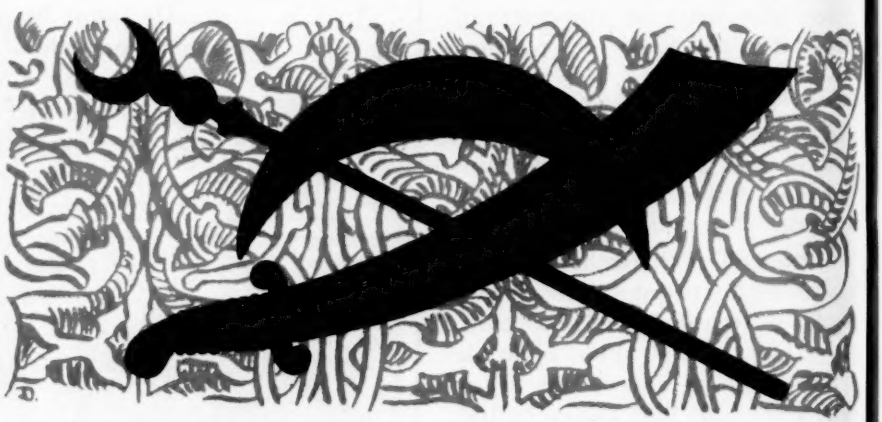
The author, Friedrich Wilhelm Fernau, was born in Gorlitz, Germany in 1913. He attended several universities and received the degree of Doctor Rerum Politicarum in 1937 from the University in Berlin. He is a student of Oriental languages. After serving for four years as a specialist on the Near East for *I. G. Farbenindustrie,* he accepted an administrative post in the office of the German Consulate in Istanbul, where he spent the years 1942-45. Since WWII, Mr. Fernau has been a member of the editorial staff and special correspondent for the Near and Middle East of a leading German newspaper in Stuttgart. Mr. Fernau has traveled extensively in the countries about which he writes and is considered to be one of the leading experts on this strategically important "Middle Continent." His book, *Moslems on the March,* was written, naturally, in German and translated into very readable English by E. W. Dickes.

Reviewed by Col H. Nickerson, Jr.

They Know No Front...

COMMUNIST GUERRILLA WARFARE — Brigadier C. Aubrey Dixon O.B.E. and Dr. Otto Heilbrunn, 229 pages. New York: Frederick A. Praeger Inc. $4.50

The arts and techniques of guerrilla warfare are firmly rooted in communist military doctrine—Russian as well as Chinese. Communist guerrilla doctrine was molded from ancient Chinese experience and Napoleon's defeats at the hands of partisans in Spain and Russia. Marx, Lenin, Stalin and Mao made valuable doctrinal contributions. This doctrine, tempered in the fire of guerrilla combat against White Russian counter-revolutionaries, Japanese invaders and Chiang's Nationalists, emerged as a "secret weapon" in the titanic struggle between Germany and Russia on the Eastern Front.



Guerrilla warfare is a prime means of the communist conspiracy. As an auxiliary to regular forces it provides intelligence, impedes the flow of supplies and dissipates manpower. As an agent of communist political infiltration it can pin down strategic reserves, embarass colonial regimes and take over entire countries—all

without the commitment of a single Russian soldier.

Dixon and Heilbrunn deal specifically with World War II Russian guerrilla warfare and German counter-measures. Theirs is virtually the first definitive work to deal with this facet of the overall guerrilla warfare problem.

Specific techniques as well as broader concepts are dealt with. Successes and failures of both sides are objectively treated. The legal status of guerrillas under various international conventions and in practice is realistically discussed for the first time. The psychological and moral problems of guerrilla and anti-guerrilla warfare are presented. All are based on captured German and Russian documents (which are extensively quoted), interrogations and testimony of German officers, contemporary published sources and the authors' own keen insight.

Allied forces in World War II encountered no guerrilla forces although they had limited experience in conducting and coordinating guerrilla operations among indigenous populations. Since then the picture has changed and the menace of guerrilla warfare looms before us. In Korea U. S. forces met communist guerrillas for the first time — fortunately on a minor scale. Our British and French allies, however, have been engaged in bitter anti-guerrilla operations in South East Asia for the past seven years. Communist success there presages a spread of this insidious form of conflict.

It behooves all professional soldiers, from front-line fighters to rear echelon supporters to know and understand guerrilla warfare and how to counter it. Guerrillas know no front, but may strike anywhere. For that reason this treatise will serve as a valuable introduction and handbook.

Kims and Paiks . . .

THE KOREANS AND THEIR CULTURE, By Cornelius Osgood, Professor of Anthropology, Yale University. Printed by Charles E. Tuttle Company of Rutland, Vermont & Tokyo, Japan, Price $1.95 or Y 700, February 1954 printing in Japan.

One would hardly believe there existed 298 surnames in Korea with all the Kim, Le, Paik and Han clans one meets. All these descendants of Tan-gun, some 30,000,000 now in the 4,287th year of their extant calendar, have developed a rather remarkable culture, although seemingly primitive by our own materialistic yardstick.

Consistently indicative of our naive approach to understanding other races is our working knowledge of the Korean people. Surely if any text were to be presently listed as required reading for Marines today it should be Yale Professor of Anthropology, Cornelius Osgood's *The Koreans and Their Culture.*

While limiting his on-the-spot research to Kangwha-do island (near Kimpo Peninsula and Seoul) during the summer of 1947, and indulging freely with professorial detail, it is nevertheless replete with pragmatic information.

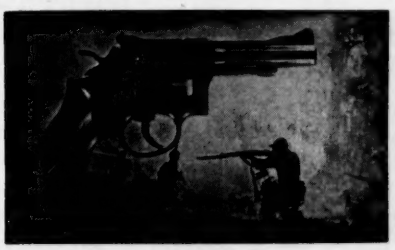
In its geographical peculiarity as a land bridge, it has suffered many invasions decimating its population and disrupting its normal economical, social and political progression. Keeping this thought foremost in our appreciation of the Korean people, we can objectively study and understand why they appear an emotionally enigmatic disposed race.

Professor Osgood somewhat contributes much of this attitude to the over developed patrilineal Confucian-reinforced society. Nowhere else in the world is the male aloofness from the female of the family carried to the nth degree, even in the husband-wife relationship.

Over specialization in cultural relationships, as in all other facets of human activity, leads to complications of nefarious natures and this may have much to do with the Korean outlook on progress as we know or perceive it.

Placing the debits and credits in juxtaposition after a perusal of this book, combined with a positive conscious approach to understanding the Korean people while observing them on your Korean tour of duty, you cannot but conclude the Koreans and their culture are a fascinating study even though con-

You can Rely on Evaluated equipment



S & W K38 COMBAT MASTERPIECE

With Low Spur Hammer & Grip Adapter

RELIABLE—combining the dependability of the revolver with the combat-proven ruggedness of S&W design

POWERFUL—with Western 38 Special Super X Metal Piercing defeats military body armor at close-combat ranges

SIMPLE—easily understood and readily mastered thru self-training

SAFE—with a clear record among all types of close combat weapons

Available with holsters and accessories to officers anywhere in the world

at substantial professional discounts

EVALUATORS LTD.

G. O. Van Orden, Brig. Gen., USMC, Ret'd
Showroom No. 1, Woodland Dr., Triangle
QUANTICO, VIRGINIA

THE NAVY MUTUAL AID ASSOCIATION

Protection in Force — $85,000,000

Assets — $26,500,000

Total payments to Beneficiaries since Organization over $22,000,000

Navy Department

Washington 25, D. C.

Organized July 28, 1879

SERVING THE NEEDS OF NAVY, MARINE CORPS AND COAST GUARD OFFICERS AND THEIR DEPENDENTS FOR THREE-QUARTERS OF A CENTURY

spicuously foreign to our occidental outlook on life, its meaning and purpose.

Reviewed by Captain Karl D. Morrison

Civil War Diary...

FOURTEEN HUNDRED AND 91 DAYS IN THE CONFEDERATE ARMY—W. W. Heartsill edited by Bell Irvin Wiley. 312 pages, illustrated. Jackson, Tennessee: McCowat-Mercer Press, Inc. $6.00

This is not a book for the Civil War reader who might be looking for proud, triumphant banners and skillful moves. It deals, rather, with the daily lives of the many men who lived and died and slept in the mud and really didn't know what they were doing or why. It is a book for the Civil War student who desires detail—the feeling of the men, exactly what they drank and carried as major events flowed around and near them.

The exacting and complete diary of W. W. Heartsill takes a company of W. P. Lane's Rangers from Texas to the scenes of the Battle of Chickamauga and the Confederate siege of the Union forces in Chattanooga. At this point, the diary keeper openly tells the remarkable story of how he and a few companions actually deserted the Confederate forces in the face of the enemy and blandly returned to their home state. It shows the attitude of self interest of many soldiers prevailing over their "duty." It is all the more remarkable that such a diary of this event was kept, when history shows that a few days after their desertion, General Grant broke out of the besieged city and smashed General Bragg's Southern forces on slopes of Missionary Ridge and the peaks of Lookout Mountain.

The book will thrill some and disappoint others. It should be good reading for all military readers searching for details and the feeling of the men embroiled in the sometimes dull, sometimes gay, sometimes tragic but always unfathomable tenacles of war.

Reviewed by Captain J. B. Soper

Grits & Potlikker . . .

THE REBEL YELL—H. Allen Smith. 124 pages, illustrated. Garden City, N. Y.: Doubleday & Co. $2.00

H. Allen Smith's latest rib-tickler, *The Rebel Yell,* is a creditable successor to such laugh classics as *Low Man on a Totem Pole* and *Life in a Putty Knife Factory.*

The author sets out to study the culture of the South, having read that climatic changes and geographical shifts were bringing the South to the North. He picks the rebel yell, that intranslatable vocal outburst of the Confederate soldier as his special subject, since it is a significant expression of Southern culture, and proceeds to charm and amuse the reader as he moves about Dixie searching for the true yell. There are times when the unreconstructed Southerner had better calm himself with corndodgers, fatback and field peas, for the author, in defense of the North, "puts on his shoes in the morning and wears them until he goes to bed at night"—he walks heavily on aged cliches, but all in fun.

Reviewed by Major R. S. Stubbs II

THAT'S the kind of extensive coverage UNITED SERVICES AUTOMOBILE ASSOCIATION is affording over 10,000 officers of the Marine Corps. For 32 years USAA has been providing low-cost automobile and household effects insurance to Commissioned and Warrant Officers of the services, in the states or overseas.

from the Halls of Montezuma to the Shores of Tripoli!

Each officer policyholder enjoys low-cost insurance because all funds are pooled for mutual protection . . . and dividend sharing. During 1953, for example, 180,000 Armed Forces officers were USAA policyholders and shared in dividends of $4,300,000—an increase exceeding one million dollars over the previous year.

Besides the low cost of a United Services policy more officers are choosing USAA each year, because they appreciate the quick settlement of claims, even in out-of-the-way places. Coverage is available if you are stationed in JAPAN, WESTERN EUROPE, PUERTO RICO, the PHILIPPINES, or in the STATES.

Take no chance on your automobile, household or personal effects—insure with USAA today and SAVE! We are as close as your nearest mailbox, telephone or telegraph office. Your USAA insurance becomes effective immediately as of time and filing date of application.

UNITED SERVICES *Automobile Association*

Dept. G. 1400 E. Grayson Street • San Antonio 8, Texas

☐ Send information on USAA Insurance covering household effects.

☐ Send information on automobile insurance based on following data:

Car Year	Make	Model	Body Type	Pass. Capacity	Serial Number

Motor Number	No. Cyls.	Cost	Date Purch.	New or Used	Factory Price

Year Current Car License State | Name in which car legally registered

Is the automobile customarily used in the occupational duties of any person except in going to and from the principal place of occupation?_____

Is the automobile customarily used in driving to or from work?_____

If the automobile is customarily used in driving to or from work, how many road miles is the car driven one way?_____

How many operators under age 25?_____

Age of each:_____

Are any of the operators under 25 owners, or principal operators, of the automobile?_____

If any of the operators under 25 are owners, or principal operators, of the automobile,

(a) are all such operators married?_____

(b) do all such operators have legal custody of a child resident in the household?_____

Name & Rank_____

Military Address_____

If car not at above address, give location of car_____

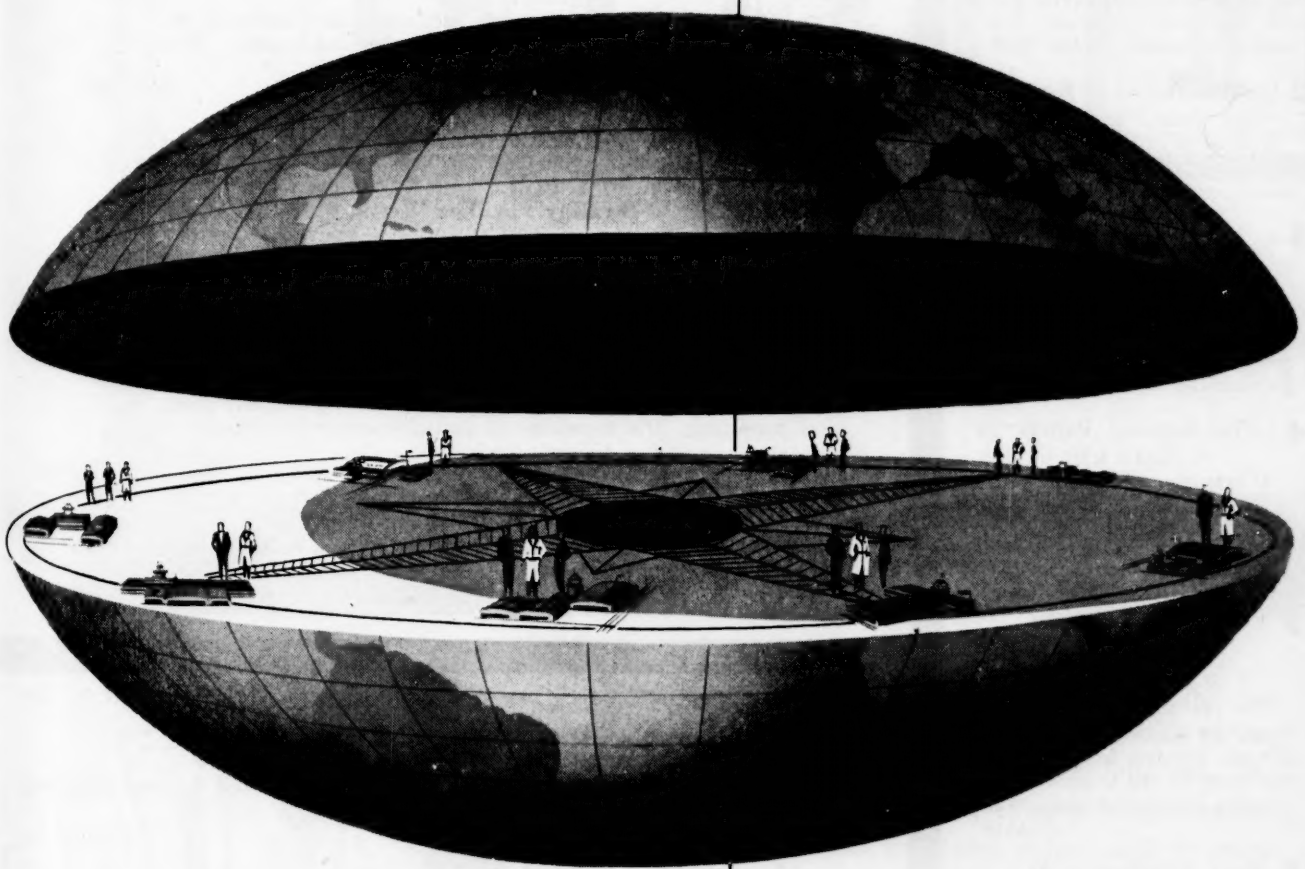
The Most Trusted Name in Ignition

offers world-wide service, facilities and parts!

BECAUSE planes fly literally to the four corners of the earth, service facilities of the Scintilla Division of Bendix are found in strategic air centers around the world. We are firm in our belief that competent service, readily available, is vital to complete customer satisfaction.

This world-wide service organization is well trained and in turn is backed up by Scintilla Division's own field service staff who have at their command the complete service facilities of an organization that has specialized in ignition equipment for over thirty years.

Thus, whatever you buy—or wherever you fly—you know that the name Bendix on any ignition product means "The Most Trusted Name in Ignition."



SCINTILLA DIVISION
of Bendix AVIATION CORPORATION
SIDNEY, NEW YORK

Bendix **AVIATION PRODUCTS**

Low and high tension ignition systems for piston, jet, turbo-jet engines and rocket motors . . . ignition analyzers . . . radio shielding harness and noise filters . . . switches . . . booster coils . . . electrical connectors.

FACTORY BRANCH OFFICES:
117 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Mich. • 512 West Ave., Jenkintown, Pa. • Brouwer Bldg., 176 W. Wisconsin Ave., Milwaukee, Wisc. • American Bldg., 4 S. Main St., Dayton 2, Ohio • 8401 Cedar Springs Rd., Dallas 19, Texas

Export Sales: Bendix International Division
205 East 42nd St., New York 17, N. Y.

Based on the sales of the Gazette Bookshop

BOOKSHOP SUGGESTIONS

9 The Recapture of Guam
Major O. R. Lodge
One of the Marine Corps' official operational monographs. $4.25

10 Report From Formosa
H. Maclear Bate
A completely detailed up-to-the-minute study of Formosa in the world situation today. $3.50

11 V-2
Walter Dornberger
The biography of a weapon which probably could have written off Operation Overlord had the Germans perfected and used it six months earlier. $5.00

12 Combat Action in Korea
Capt. Russell A. Gugeler
A series of combat-action-type reports on infantry, artillery and armor actions in Korea. $5.00

13 Ordeal by Fire
Fletcher Pratt
Here is the whole story of the Civil War written in clear, concise English. One of the best one-volume histories of the War Between the States. $5.00

14 The Rommel Papers
H. Liddel Hart
A masterly picture of Rommel's dramatic career and his campaigns. Rommel's own sketch plans for the battle of Tobruk are included. $6.00

15 The River and the Gauntlet
S. L. A. Marshal
The defeat of the Eighth Army by Chinese Communist Forces. The first full report on the entry of the Chinese Communists into the Korean War. $5.00

16 From Flintlock to M-1
Joseph W. Shields, Jr.
The development of shoulder arms in the United States. $7.50

17 Battle Cry
Leon Uris
The story of a Marine. The tale of American youth in the crucible of war. True, funny, terrible and touching all at once. $3.95

★ BEST-SELLERS ★

1 The Caine Mutiny Court Martial
This is the publication of the smash-hit play by the same title. Interwoven through the dialogue is the whole story of what happened on the *Caine*. $2.75

2 Men of Colditz
P. R. Reid
A fascinating study in nationalities. Colditz housed English, Dutch, Polish, Belgian and American POWs. The author contrasts national modes of behavior and escape techniques. $3.95

3 The Last Captain of Horse
Werner Bergengruen
A genial novel, urbane and witty. It is the delightful recollections of a retired Captain of Horse, who in our own times stands as the last representative of the age of chivalry. $3.50

4 Confederate Agent
James D. Horan
The secret story of the Confederate plot that nearly destroyed the Union from within. A story of espionage, sabotage and treason. $5.00

5 The Blue Hussar
Roger Nimier
The French version of *From Here To Eternity*. An 18-year-old joins the French resistance movement in 1940. $3.75

6 Strategy For The West
Sir John Slessor
Bold, dynamic and controversial. A working plan for final victory over Communism by one of the great military strategists of the West. $3.00

7 Kesselring — A Soldier's Record
Field Marshal Albert Kesselring
Kesselring was on the spot all during World War II, wherever things were happening. His knowledge of participation at every point of crisis gives the book a dramatic touch. $5.00

8 The Execution of Private Slovik
William Bradford Huie
Private Eddie Slovik was the only American Soldier to be executed for cowardice on the battlefield since 1864. This story raises questions to which our wisest leaders still lack the answers. $3.50

THE GAZETTE BOOKSHOP • BOX 106, M. C. S. • QUANTICO, VA.

BOOK ORDER FORM

My check or money order for $..... is enclosed for the following numbered books:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24						

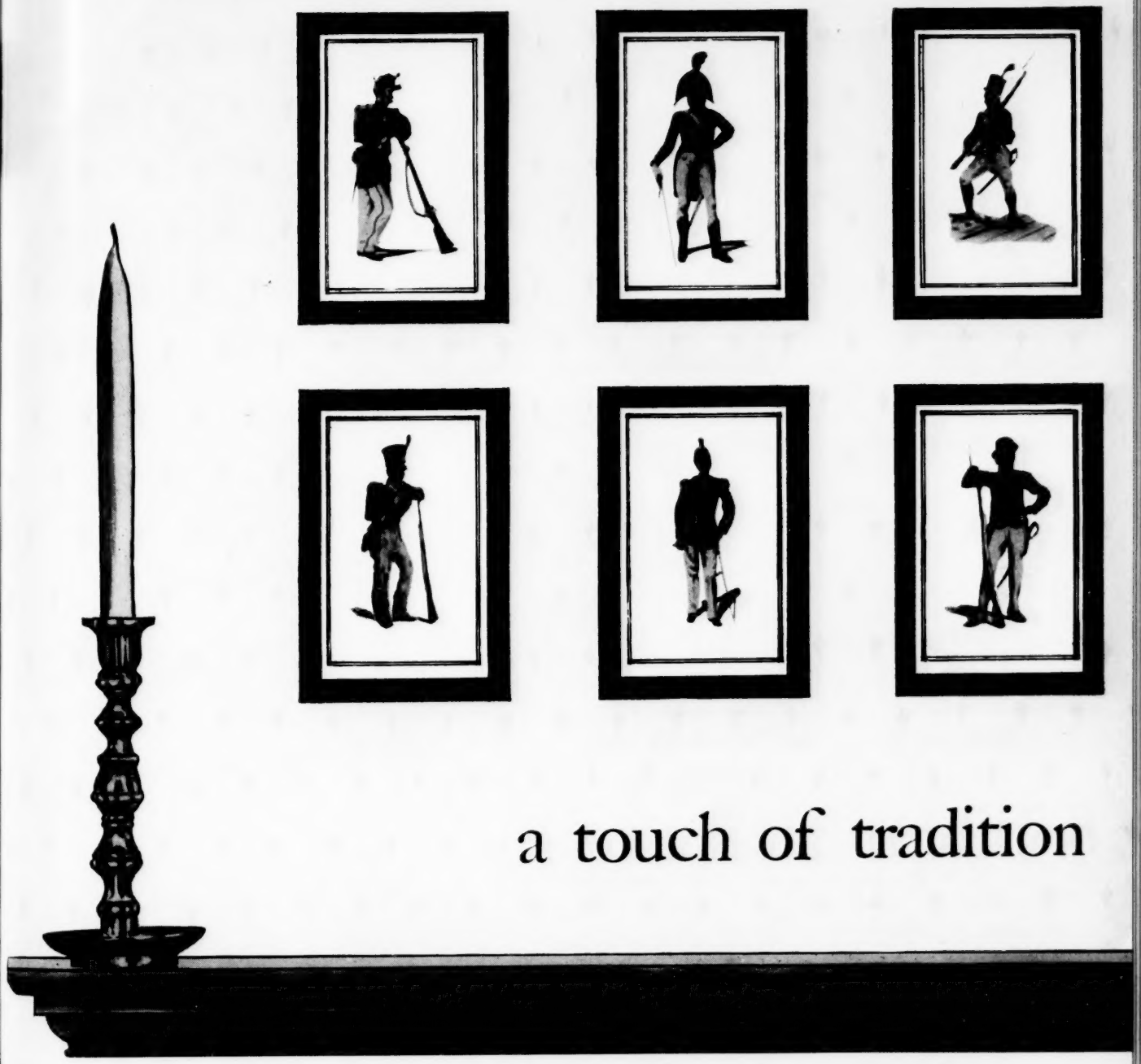
SEND TO:

NAME & RANK (PRINT)

ADDRESS

Sept.

* Members of the Marine Corps Association may deduct 15 per cent from the list price of any book in print. C.O.D.s can not be accepted.



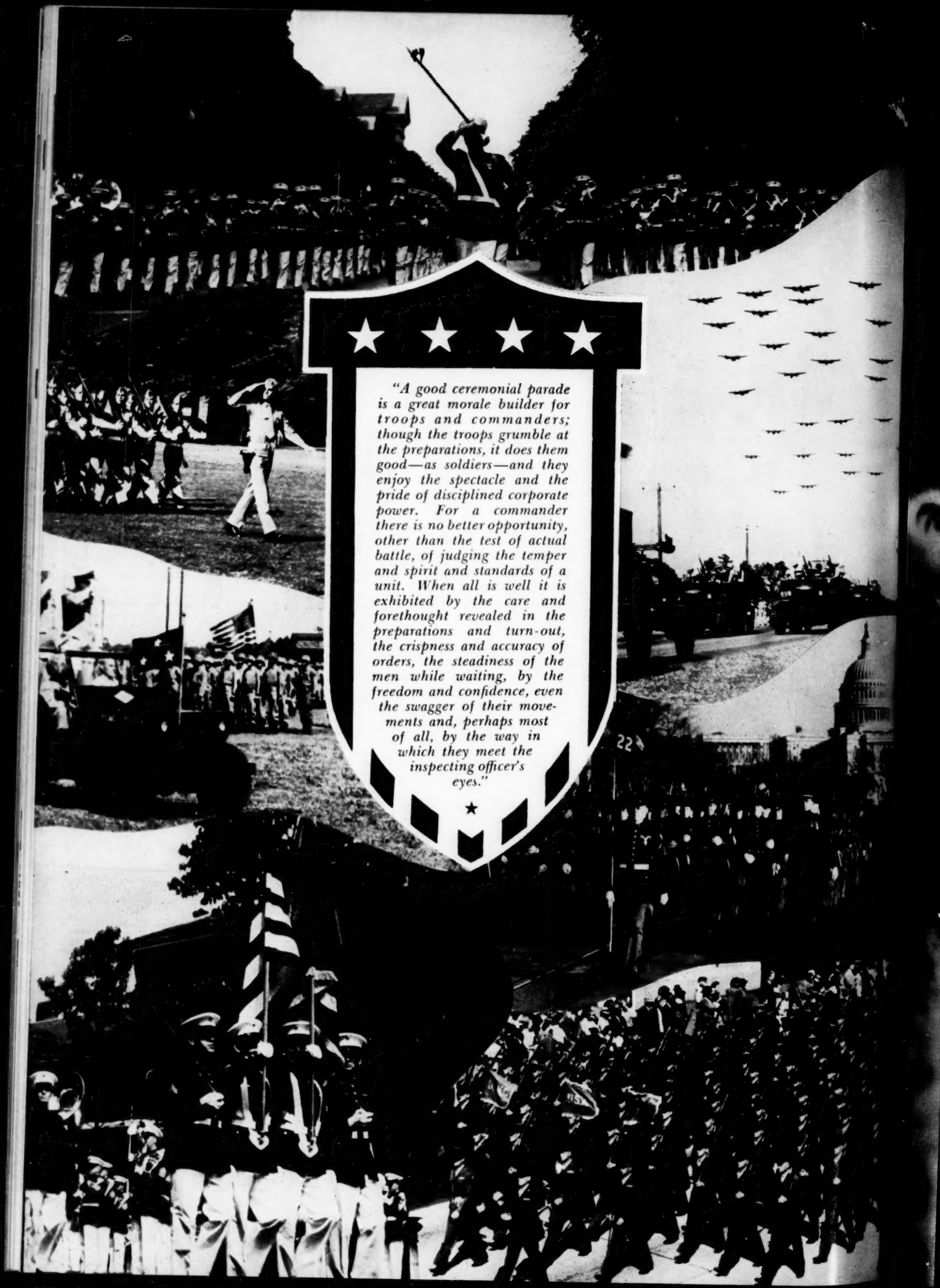
a touch of tradition

We were a little late getting the first prints out of the shop, but we were striving for perfection and it took a little time. The finished product is rolling off the presses now, however, and there's a stock ready for immediate delivery.

Identical prints are a part of the Marine Corps' permanent display at the Smithsonian Institute.

Order *Now!* Twenty-two different color prints of Marine uniforms $1.00

The MARINE CORPS GAZETTE, Box 106, Marine Corps Schools, Quantico, Va.



"A good ceremonial parade is a great morale builder for troops and commanders; though the troops grumble at the preparations, it does them good—as soldiers—and they enjoy the spectacle and the pride of disciplined corporate power. For a commander there is no better opportunity, other than the test of actual battle, of judging the temper and spirit and standards of a unit. When all is well it is exhibited by the care and forethought revealed in the preparations and turn-out, the crispness and accuracy of orders, the steadiness of the men while waiting, by the freedom and confidence, even the swagger of their movements and, perhaps most of all, by the way in which they meet the inspecting officer's eyes."